PETROLEUM WEEK

MAY 4, 1956

■ A McGRAW-HILL PUBLICATION

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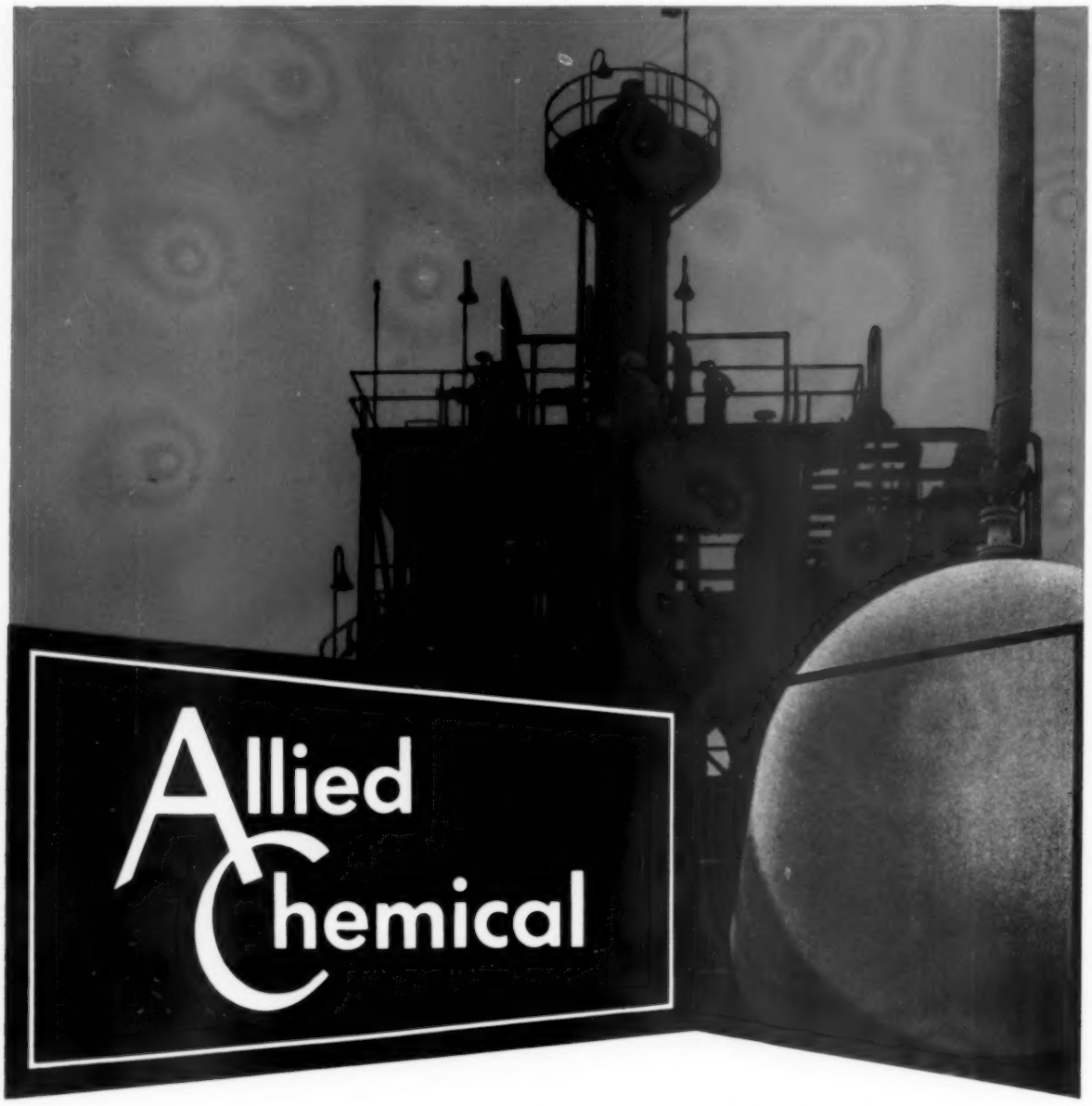

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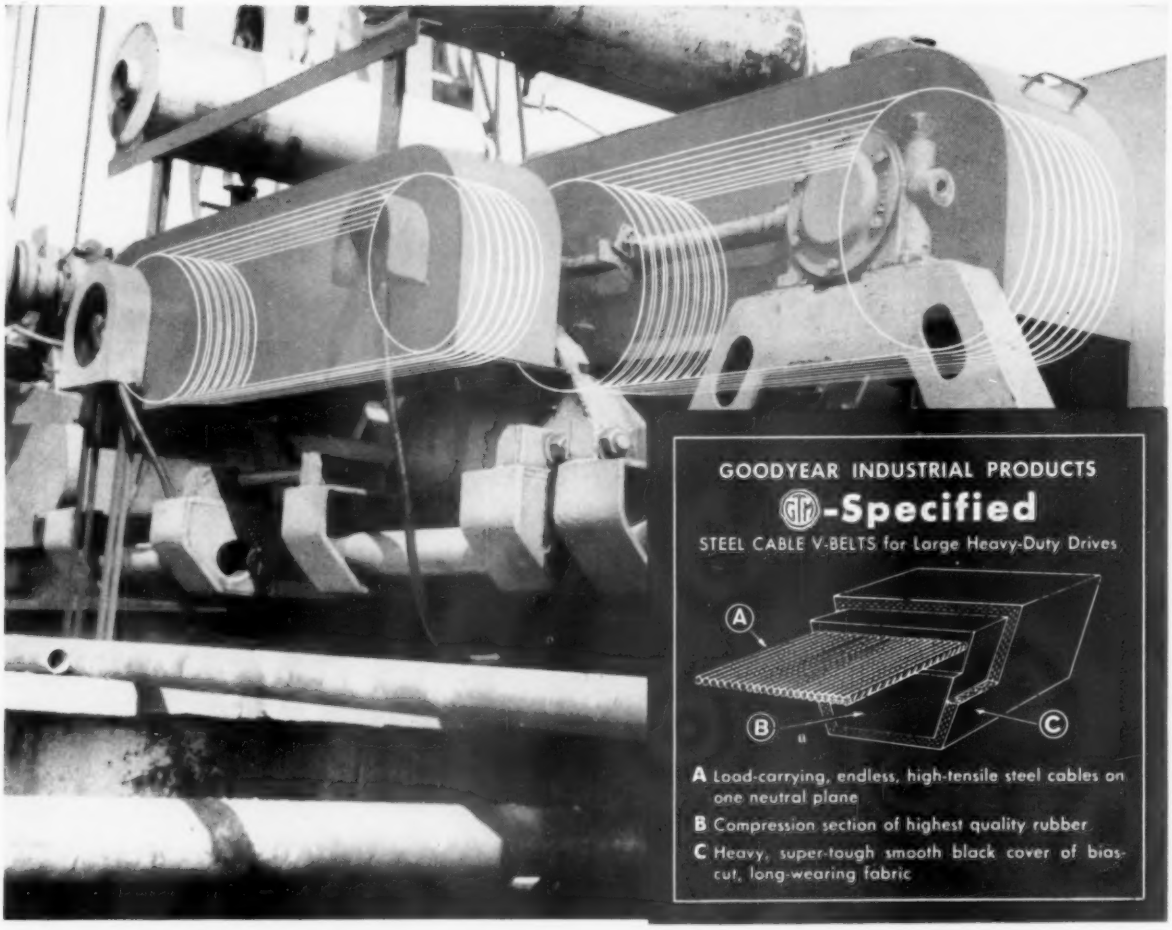
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60-Second Summary / WHAT'S HAPPENING IN OIL

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May 4, 1956

dept/INDEX

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Esso is going to market three grades of gasoline instead of two—and the new grade will be over 100-octane. The move, if followed by others, will have a broad impact on production, refining, and marketing.

. . . p. 11

•

Middle East oil is usually thought of as one unit—but it isn't. Instead, there are four principal producing nations, and they eye each other warily. That's an important point to remember, for if one of them were to halt production, the others would happily fill the gap. . . . p. 20

•

A new effort is being made to awaken the "sleeping giant" of West Texas—the Delaware Basin. The basin has been successful at shallow depths. Now two wildcats are drilling deep to test formations at 15,000 ft. and beyond. . . . p. 14

•

Piston-engine advocates have some new tricks up their sleeves to offset possible competition by turbocars. For example: Further changes in combustion chambers to reduce octane requirements. But turbo enthusiasts are still sure theirs is the car of the future. . . . p. 37

•

There may be geological areas near you which are suitable for underground storage. The Interstate Oil Compact Commission has just published the first state-by-state study showing such locations. . . . p. 26

•

Gulf is shooting for more high-octane blending components in its Port Arthur (Tex.) refinery-modernization program. It's expanding both its polymerization and alkylation facilities there. . . . p. 38

•

Our crude production capacity is growing, but it may not be growing fast enough. An IPAA committee reports that U. S. capacity is reaching new highs, and will continue to increase if there is favorable economic climate. But it notes that our spare capacity dropped more than 100,000 b/d last year. . . . p. 9

•

IPAA is putting the problem of new natural gas legislation on the White House steps. Unlike TIPRO, which wants a key role in drafting a new bill, IPAA feels the next move is up to the Administration.

•

The General Gas Committee provided information on—but did not lobby for—the proposed natural gas bill, Mastin Nixon told senators who are investigating lobbying. And Nixon gave a strict accounting for the $119,000 the committee spent. . . . p. 13

Looking Ahead in Washington

McGraw-Hill
Washington
Bureau

May 4, 1956

Industry people are regrouping for a new try at getting natural gas legislation next year. They are in Washington now, arguing: The more federal control of natural gas, the more pressure there will be for increasing crude oil prices. A top industry expert is using this approach now. It will become a general line.

•

Canadian gas—in large volume—is still a long way off. That is the prediction from people watching the Federal Power Commission hearings. Industry sources say that Alberta reserves amount to less than 10% of those in the U.S., and much of these are inaccessible. Note, though, that Texas Eastern Transmission Corp. is negotiating with Pemex for 50-million cf/d more Mexican gas than it originally planned.

•

The alkylate goal may not be expanded again, after all. Government planners recognize the growing need for alkylate refining capacity. But they find that expansion outside the government's fast tax writeoff program has been substantial. Defense Mobilizer Flemming will decide soon whether more federal help is needed.

•

Synthetic rubber is fading as a "giveaway" issue. Critics of the government's disposal program claimed small rubber fabricators would be squeezed out with "big oil" and "big rubber" in the saddle. But Eisenhower says, in a formal report, that small businessmen actually have upped their share of synthetic rubber consumption since the government bowed out. He's confident that industry will be able to produce synthetic "natural" rubber (page 39) without special U.S. aid. And here's his clincher: Sale of the plants earned the U.S. a hefty profit.

•

Chances of an FTC conference on oil marketing are slim. The Federal Trade Commission is unlikely to call the trade practice conference sought by the National Congress of Petroleum Retailers. Here's why: Such a conference is a waste of time unless all parties can agree. This is out of the question in a big industry.

•

There's growing industry concern over the premerger-notification bill. The House-passed measure, now pending before the Senate, provides, for instance, that if a $10-million company acquires more than 5% of the assets of another company, the government must be notified. Lawyers feel this may put a legal crimp in common oil industry transactions. They say it conceivably could cover a small producer's sale of reserves to a major, or a supplier purchase of stocks belonging to a defunct dealer. Congressional sources say the law won't be so far-reaching—that it will apply only where control of a company is involved.

•

Oil products storage capacity is up 50% at bulk plants and terminals. The census bureau will report this next week in publicizing the results of its new oil wholesaling census—the first since 1947.

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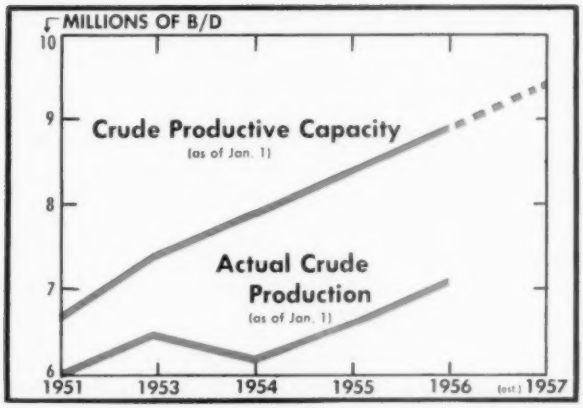
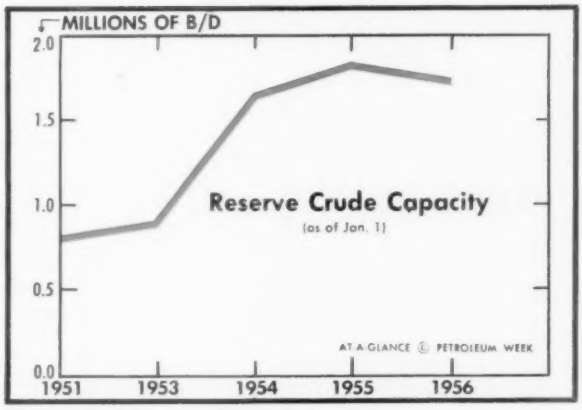




TOTAL U. S. oil producing capacity is rising, but an IPAA report shows that . . .

U.S. Shut-In Capacity Shrinks

● U. S. producing capacity for crude and natural gas liquids will reach 10,280,000 b/d by Jan. 1, 1957, an IPAA committee forecasts.

● However, the domestic shut-in capacity is declining. It dropped 100,000 b/d for crude alone in the past year.

One of the big questions facing the oil industry and the nation is this: Just how much crude producing capacity does the U. S. have?

It's important not only to the producers themselves, but to refiners seeking crude supplies, to transporters, to marketers, as well as to the general public.

It's important also to defense planners who need to know how much oil will be available to fight a war or to meet a peacetime emergency. The present unrest in the Middle East is simply one more reason why such information is vital.

An Independent Petroleum Assn. of America supply committee gave its view this week: U. S. producing capacity for crude oil and natural gas liquids will push past 10-million b/d by the end of this year.

The committee's forecast of a total of 10,280,000 b/d by next January includes 9,430,000 in crude oil and 850,000 in natural gas liquids.

This would be an increase of about 500,000 b/d over the estimated capacity at the beginning of this year. That, in turn, was 534,000 b/d higher than in January, 1955.

The committee confidently predicts that there will be "a continued expansion in the availability of oil from domestic sources."

At the same time, the committee's figures show a sag in the nation's shut-in producing capacity.

It estimates that the amount of unused capacity in 1955 was 1,753,000 b/d, including 1,730,000 b/d in spare crude capacity.

In 1954 the excess capacity was estimated at 1,918,000 b/d including 1,838,000 b/d in crude. Thus the picture is this:

In a year's time, the excess crude capacity alone dropped 108,000 b/d—from 22.5% of total capacity in 1954 to 19.4% in 1955.

This was in contrast to the steady rise in recent years (see chart). In 1951, for example, domestic shut-in crude capacity was estimated at only 820,000 b/d.

The past year's drop in spare capacity occurred while supply itself was increasing 5.8%. In other words, greater demands more than offset the gains in supply.

This situation raises the question of what can be done to keep a safe margin of spare capacity.

The IPAA committee says in its report that expansion of U. S. producing capacity depends primarily on the extent of exploration and development efforts, and on the industry's ability to increase productivity through advances in technology.

The IPAA committee points out that a lot depends on such economic facts of life as increased costs, tax policies, supply of materials, and the availability of funds.

The availability of funds, it notes, rests to a great extent on the price of crude oil. If increasing costs squeeze the profit margin, production will be adversely affected.

Robert L. Wood, IPAA president, says a price boost of 50¢ a bbl. and a limitation of oil imports to the 1954 level would go a long way toward solving the problem.

This action, he says, could add 1-billion bbl. of oil and 4-trillion cu. ft. of gas to U. S. reserves within a single year.

In five years, it could mean 5-million bbl. of additional oil reserves—a two-year supply. "It could mean the dif-

ference between adequate and inadequate supplies in any future conflict," Wood says.

W. H. Geis, a Los Angeles oil tax authority, says flatly that the oil producing industry can not generate enough funds within itself to meet the growing cost of finding oil under present conditions.

To correct the situation, he told IPAA members at their Los Angeles convention this week, the depletion percentage would have to be increased from 27.5% to 39.5%.

The alternate to such an increase in the depletion percentage, Geis says, would be an increase of 58.8¢ per bbl. in the price of crude.

The problem of getting an accurate estimate of the nation's excess producing capacity has long been a difficult one.

The uncertainty arises from the fact that no one can say exactly what the actual producing capacity of a well or field is over an extended period.

Some qualified experts say that producing capacity estimates are often too high.

They say, for example, that in states where production is prorated, a producer naturally will be inclined to estimate producing capacity on the high side, rather than on the low side, so that his allowable will be greater.

William J. Murray, Jr., chairman of the Texas Railroad Commission, recently told Petroleum Week that 25 days would be a realistic producing month for many Texas fields.

"There's no way to determine the maximum efficient rate of production (MER) except by running the field," he commented. "But a great many fields could not produce at MER on a 30-day basis. In my opinion, about 25 days would be more realistic."

Best estimates from commission sources is that Texas could produce about 735,000 b/d more than its present 2,927,000 b/d level. This takes present conservation laws into consideration and would be based on a 20-day producing month. It also takes into consideration the estimate that underproduction (below that permitted) would increase to 20%.

The government, keenly interested in the nation's crude oil producing capacity, may ask the National Petroleum Council to update its 1954 study.

Government oil planners say they would like to see a spare capacity of 20% of total capacity in order to meet possible emergency needs. Privately, they doubt that it's this high. As one official expresses it: "I'd settle for 15%."

Congressional Scoreboard

The next 90 days are important ones in Congress. During that time, a showdown will be reached on many legislative proposals. The following is a summary of the present status of bills of direct and indirect interest to the oil industry:

Military oil development. The Engle bill, which would require congressional approval before 5,000 acres or more of public lands could be turned over to the Defense Dept., is pending before the House Interior Committee. Fate of the measure is unclear. Its supporters also want to prohibit military oil development on any area, including the outer continental shelf, which has not been declared a Navy petroleum reserve (PW—Apr.27'56,p11).

Depletion. Bills to reduce the oil and gas depletion allowance from 27½% to 15% apparently will die in committee in both House and Senate for lack of support. No hearings are scheduled (PW—Mar.2'56,p12).

Motor fuel taxes. The Fallon highway bill, which includes a section imposing higher taxes on gasoline, diesel oil, and special motor fuels, passed the House last week by a 388-19 vote and is now before Senate committees. A brisk Senate floor fight is expected, but chances for passage are considered good (PW—Apr.27'56, p11).

Excise taxes. A House Ways & Means subcommittee has recommended that the tax on transportation of oil by pipeline be lifted if such movement is an integral part of the "manufacturing" process. The same bill, now pending before the full committee, also would grant refund of the gasoline tax paid on gasoline and products lost in disasters. Final enactment is still doubtful.

Oil and gas production payments. The Mills bill, which would make sale of oil and gas production payments subject to the regular income tax rather than the capital gains tax, is gathering dust in the House Ways & Means Committee. But it could be resurrected and passed as part of an omnibus tax bill (PW—Mar.9'56,p12).

Premerger notification. A bill requiring that the government be given 90 days advance notice of large companies' intent to merge has passed the House and is pending before the Senate. Enactment is likely.

Foreign trade. A measure authorizing U. S. membership in the Organization for Trade Cooperation is pending in the House following approval by the Ways & Means Committee. If it passes the House, Senate approval is very doubtful.

Wildlife refuges. Interior Dept. has promised Congress that no future oil and gas leases will be granted on wildlife refuges without notifying the proper committees of Congress (PW—Dec.6'55,p12). Legislation on the subject is unlikely this year.

Water pollution. Petroleum interests won a point this week as a House public works subcommittee reported out a permanent water-pollution-control bill. The group restored a requirement that federal courts give consideration to a company's physical and economic problems before ordering abatement measures to be taken. A law has to be passed before June 30, when existing law expires.

Esso Goes to Three Gasoline Grades

● **Introduction of 100-octane fuel will have a big impact on the industry's refining and marketing patterns.**

● **Producers will benefit from higher crude demand caused by reduced gasoline yields.**

Esso Standard Oil Co. is switching to a three-grade gasoline marketing system throughout its territory this summer. A new top-grade motor fuel being introduced by the company will have a rating of more than 100 research octane. This will be the first 100-octane motor fuel to be marketed over a wide area.

The new top-grade gasoline, named "Golden Esso Extra," is being sold at one company training service station in New Orleans starting this week, to test customer reaction. Soon the test will be extended to one training station each in Baltimore, Boston, Memphis, and Washington, and to two stations in the New York City area.

General marketing of the new grade of motor fuel will be started in five other test cities by June 20. By mid-August the new product will be available to about 75% of the dealers in Esso's 18-state East Coast marketing region.

While Esso is not saying what the exact octane of its new gasoline will be, it made it clear that the research rating will be more than 100-octane.

• Esso says a definitive research octane of the new fuel is not possible because its rating exceeds the limitations of the present scale of measuring octane ratings up to 100.

• Also Esso's tankwagon price (and the retail price at company-operated training stations) will be 3¢ a gal. over its present premium motor fuel—which is now at the 98-octane level.

In the 98-octane to 100-octane range, each additional octane number costs about 1¢ a gal.

Esso's new gasoline marketing technique will affect the oil industry's 30-year-old practice of generally selling only two grades of motor fuel.

Marketers competing with Esso on the East Coast will be the first to demand a competitive gasoline to the new Esso top grade. And as the new Esso technique spreads to other marketing companies in the Jersey Standard organization, their competitors also will demand similar gasoline from their suppliers.

The addition of a new grade of gasoline means more pumps and storage tanks at stations.

Refiners will be most affected. Regardless of what new techniques may be tried by other companies to compete with Esso, they all will mean that a higher-octane motor fuel will have to be made.

Esso says its new 100-octane-plus gasoline will be made at all of its refineries, using existing processes. To get a higher Btu. content per gal.—the most efficient method of reaching higher octanes—will mean increasing aromatics output from catalytic reformers and greater use of alkylates.

Other refiners have this type of capacity already installed. And the processes are available for licensing.

But high octane requirements will mean greater capital investment in new units for making high-octane gasoline, since some refiners already are straining to meet present requirements.

Producers will benefit from a nationwide shift to higher octanes. More crude and more natural gasoline components (PW—Apr.27'56,p36) will be required as higher octanes reduce the gasoline yields from crude.

The introduction of the 100-octane-plus motor fuel emphasizes the need for a revision of the present octane measuring scale. Various methods of revising this long-used yardstick will be discussed at the API annual refining meeting in Montreal later this month (PW—Jan. 20'56,p 38).

And Esso Standard officials revealed this week that the research affiliate, of Jersey Standard, Esso Research & Engineering Co., will present to the Society of Automotive Engineers this summer a new "road guide" system for measuring antiknock performance of gasolines.

Esso decided to break away from the general practice of marketing only two grades of gasoline because a higher-than-existing-premium motor fuel is now required by about 20% of the new cars on the road, according to Stanley C. Hope, president.

The percentage of new cars requiring a higher-than-average premium gasoline will rise sharply in the next few years as engine compression ratios continue to climb, he says.

Esso decided to go to a three-grade level, rather than the five-grade level used by Sun Oil Co., because it believes the three-grade system is less costly.

Unlike Sun's revolutionary method of selling gasoline (PW—Feb.24'56, p11), Esso's practice will be to blend the three grades at the refinery. Each grade will be sold from a separate pump, with the new top-octane grade dispensed from a gold-painted pump.

Using a concentrate at the service station pump, Esso officials say, means that high-octane concentrate has to be segregated at the refinery from high-costing hydrocarbon components and then added back at the pump to a low-octane material. They say this is more expensive than blending the three grades at the refinery.

Also Esso states that the service station blending pumps for five grades cost about two and one-half times as much as the standard pumps and tanks to be used by Esso.

(Three grades of gasoline have been sold before, of course—but up to now the third pump has always dispensed an extra-low-grade fuel. This is the first time an extra-high-grade gasoline has been offered.)

Esso says its new three-grade system of selling gasoline is the most economical method of providing motor fuel to meet the octane requirements of the various cars on the road, without penalizing motorists who do not need the higher-priced, highest-octane gasoline.

The advantages of the three-grade system, the company says, are that:

• **It means a lower cost to motorists,** because the owner of an older-model car can continue to buy either regular or premium grade gasoline to suit his engine's requirements. And, as Esso states: "Once the engine's octane requirements are met or satisfied, additional antiknock quality does nothing whatsoever to improve performance, and is wasted."

• **It means a smaller refining investment by oil companies.** Esso estimates that to meet gasoline octane requirements by 1961, a two-grade gasoline marketing system would mean an industry investment of $3-billion in refining facilities to turn out the two grades required. Using a three-grade system, with only the top grade tailored to satisfy the appetites of the highest-compression engines, the refining investment required would be

on the order of $1.6-billion, the company says.

• **It means more efficient utilization of petroleum resources.** This is because the higher the octane level, the lower the yield of gasoline from a barrel of crude.

• **It permits further advances in engine design.** Esso says it plans to continue to gear the antiknock specifications of its new fuel to the requirements of the highest compression engines to be manufactured.

This is an important advantage of the three-grade system. Esso reports that some auto makers have had to cut down the compression ratios of their 1956 models because today's top-quality gasolines cannot satisfy their octane requirements.

British American Is Looking Ahead

Look for a boost in refining capacity and another expansion by a revitalized British American Oil Co. once its deal with Gulf Oil Corp. is settled.

The deal, in which British American will acquire Canadian Gulf Oil Co. from Gulf in exchange for shares of British American Stock, will roughly double British American's assets. It also will:

• More than double British-American's ratio of crude oil production to refinery throughput.

• Make British American the largest producer of natural gas in Canada, after completion of a pipeline eastward.

• Create a high degree of integration for the Canadian company and strengthen its competitive position.

• Increase Gulf's share in British American stock from 25% to about 60%.

M. S. Beringer, president of British American, has told stockholders that expansion of the company's western Canada refineries should begin within two years.

In a review of operations in 1955, Beringer said the company's refinery expansion program continues to be a highlight. He reported that catalytic reformers have been completed at Calgary and Montreal, and that work is proceeding on a third, at Clarkson. He said additional crude refining facilities at Clarkson will more than double that refinery's output.

There is also speculation that the company is planning to build a refinery at Vancouver.

'Time to Speak Out' — Porter

Six ways oil men can save their industry's freedom were broadcast this week by Frank M. Porter, president of the American Petroleum Institute. The core of his message to all oil men: Act honorably—and speak out against false charges of dishonor.

In his address before the Independent Petroleum Assn. of America in Los Angeles, Porter warned that oil critics are shooting for "complete nationalization of oil and all its workings." He appeals to the entire industry:

• "I urge all oil people to conduct themselves properly."

• "I urge each of you to know your industry, its accomplishments and service, and to become articulate about these things."

• "Let's solve our intra-industry differences among ourselves."

• "All the companies, large and small, should more effectively seek to win public understanding."

• "All oil people can participate in the work of the Oil Industry Information Committee."

• "I urge each of you to support financially, and with your active participation, the public relations programs of all our trade associations."

Porter also raises the question of why the industry is "pilloried" despite its record of outstanding service.

He says the industry has met all demand for oil to support a rising standard of living, and for defense; the industry is efficient, and pays high wages; its employee benefits and community service are exceptional—yet the false charges continue.

Porter believes the answer is that oil is attacked, not in spite of its great achievement—but because of it.

"The oil industry attracts the wrath of those who resent success," he says.

API's Frank Porter
"Our critics . . . talk rings around us."

Porter believes there is a parallel between the industry's service and the billions of dollars the U. S. has spent to aid other nations overseas. "Analyze the criticisms flung at our country from overseas," he says, "and you will note a striking resemblance to the charges flung at our industry."

Porter calls it unfortunate that the people of "leftward leanings" who voice these charges "are the most copied style-setters of American political thinking."

He sums up by saying, "The oil industry has just one physical defect—it's tongue-tied.

"The only way the industry can speak is through the voices of individual oil men."

NEXT WEEK *in Petroleum Week:*

Public Opinion and Your Future

In all parts of the industry, the call is going out for action on oil's public relations. The appeal made this week by Frank Porter (above) pinpoints the three biggest questions:

• Where do oil men stand with the public in the light of recent bad publicity?

• What should oil men do about unfavorable public opinion?

• How can they do the job?

On the right answers to these questions hangs much of oil's future. To get those answers in detail, PETROLEUM WEEK has made a coast-to-coast survey of many score oil men, newspaper editors, and legislators—the men whose thinking will largely point the industry's course.

During the next two weeks, PETROLEUM WEEK will publish the consensus of their answers in a double-barreled Special Report, written in terms of every oil man's own immediate personal stake in finding the right solution to this biggest of all oil industry problems.

Kickoff date: May 11.

What's New / IN THE INDUSTRY

Esso Is Renewing 'Fair Trade' Price

Esso Standard Oil Co. resumed fair trading of its gasoline in New Jersey this week.

The company also reported its wholesale prices to dealers to within 0.6¢ a gal. of so-called normal. Esso established the following as minimum prices at which gasoline carrying the Esso brand may be sold at retail in the state: regular grade, 19.9¢; premium, 22.9¢. Both prices are ex 6¢ state and federal taxes.

In a second move aimed at improving market conditions in New Jersey, where long and frequent price wars have occurred, Esso also increased its dealer tank wagon posting to 14.9¢ a gal. ex taxes, for regular grade. This is an increase of 1.4¢ a gal.

Esso began fair trading in New Jersey in the late 30s, but abolished it in 1951 following a U. S. Supreme Court decision. Changes in the law since then have permitted the resumption.

There was no immediate indication as to what other major marketers in the area would do as a result of Esso's move.

•

Jet Needs Double

Jet fuel consumption by Air Force heavy bombers and transports will double in the fiscal year ending June 30, 1957, according to Air Force spokesmen. Aviation gasoline requirements will also be greater.

The estimate was given in hearings before the House Appropriations Committee, which is considering an Air Force request for $620,430,000 for fuel and oil. This compares with $513,331,000 estimated for fiscal 1956. The Air Force spent $479,622,266 for aircraft fuel in fiscal 1955.

•

Phillips Is Sued

All 23 directors of Phillips Petroleum Co. are named defendants in a stockholder's suit demanding an accounting of profits realized in dealing with Ada Oil Co.

The suit was filed in the Court of Chancery, Wilmington, Del., by Lillie S. Mayer, of New York. The complaint alleges that the board permitted dealings between the two companies "to the benefit and enrichment" of Ada Oil and Kenneth S. Adams, Jr., its president, who is a son of Kenneth S. Adams, Sr., chairman of Phillips.

The court was asked to seize all stock held in Phillips by its directors and to impress a trust on all properties of Phillips.

Phillips is "confident that the claims in the suit will be shown to be wholly unfounded," K. S. Adams, Sr., said this week. "All negotiations between Phillips and Ada, or K. S. Adams, Jr.," he said, "have been carried on by the representatives of the particular department of the company regularly handling the type of activity involved."

•

Price increases on certain tubular steel products have been put into effect by National Tube Division, U. S. Steel.

Prices of large-diameter pipe, in sizes ranging from 14-in. to 36-in. were boosted 3%. There were varying price adjustments on certain items of small-diameter line pipe. A 3% price hike was also put into effect on pressure and mechanical tubing.

Some grades of drill pipe and casing also were increased in price.

•

Note to critics of the depletion allowance: Oil and gas producers pay about twice as much tax per income dollar as the average of all industrial corporations.

That conclusion, says Robert L. Wood, president of the Independent Petroleum Assn. of America, can be reached from a study of U. S. Treasury Dept. reports.

Those reports show that in 1952, for example, producer taxes averaged 7.48¢ on each sales dollar compared with 3.6¢ average for all corporations.

Wood told IPAA members at their midyear meeting in Los Angeles this week that more than a half-billion dollars in U. S. income taxes and more than a quarter-billion dollars in other federal, state, and local taxes will be generated by oil and gas production this year.

•

Changes in accounting methods used by oil companies are needed to reflect higher replacement costs, according to James V. Brown, secretary-treasurer of the National Petroleum Council.

Brown, who is chairman of the Cost Study Committee of the Independent Petroleum Assn. of America, made the recommendation at a Petroleum Accounting conference in Wichita, Kan., last week.

He pointed out that book-cost accounting simply writes off fixed assets over the life of property, without taking into account rising replacement costs.

•

U. S. manufacturers of oil country tubular goods are faced with the prospect of competition in the Southwest from Germany's largest integrated maker of steel and tubular goods.

American Mannex Corp., general agents in the U. S., Canada, and Mexico for the German firm of Mannesmann A. G., has opened a district office in Houston, its first in this country.

Mannesmann's Western Hemisphere activities include a recently opened steel mill in Brazil and an automatic seamless-tube mill in Sault St. Marie, Ontario, scheduled for an early 1957 opening.

•

The W-K-M Mfg. Co. will start operating May 17 from its new 12-acre plant in Missouri City, Tex. (near Houston).

The multimillion-dollar building will house W-K-M, a subsidiary of ACF Industries, Inc., and two companies it acquired during the past year —Key Co., of East St. Louis, and ACF Valve Division, of Detroit (PW —Jan.20'56,p13).

The plant is designed so that each of the three product groups will have its own production lines.

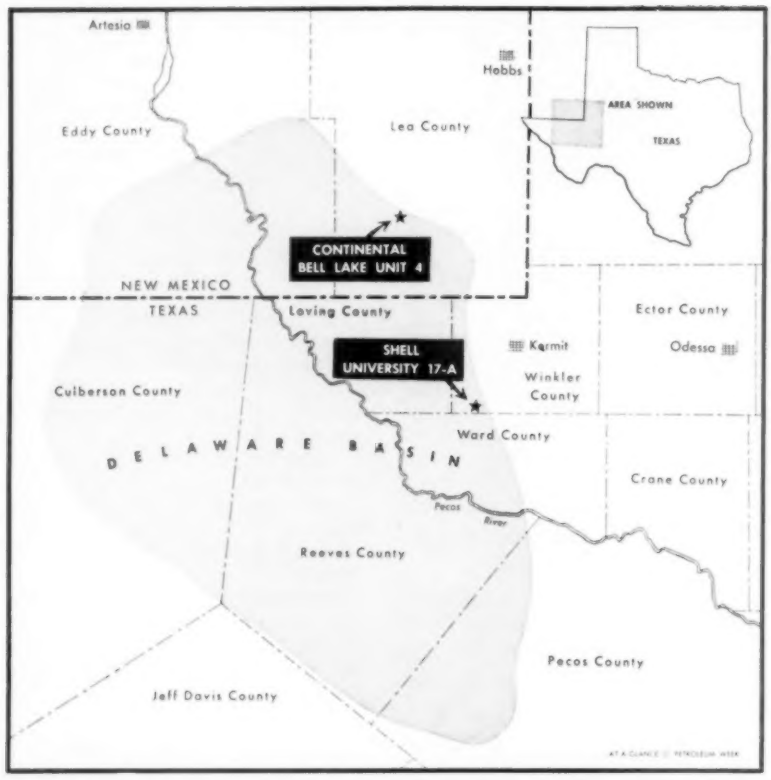
There will be 1,100 employees, including management and other personnel transferred from East St. Louis and Detroit.

•

Mastin Nixon, chairman of the General Gas Committee, told Senate investigators this week his story of $119,000 worth of lobbying for the Harris-Fulbright bill—all "on the highest ethical and moral plane."

Nixon was the lead-off witness before a special committee investigating lobbies. He told the senators the gas committee had total receipts of $119,988.22, from 249 donors. The average contribution was $476.41; the largest, $3,855; the smallest, $25.

Wages, fees, and the like took the biggest bite, $38,290, Nixon said.



DELAWARE BASIN deep tests, one to the Devonian, the other to the Ellenburger (Ordovician), may answer a question that has been worrying operators in this big area:

Will Deep Drilling Pay?

Two deep wildcats were probing their way toward the Devonian and Ellenburger (Ordovician) formations this week in a two-fold effort to awaken a possible sleeping oil giant —the Delaware Basin of West Texas-New Mexico:

- Shell Oil's 1 University 17-A, in Winkler County, Tex. (map), will go below 15,000 ft. to test the Devonian.
- Continental Oil's 4 Bell Lake Unit, in Lea County, N.M., will go down to 17,000 ft., to test the Ellenburger lime.

Both wildcats are near the edge of the Delaware Basin.

Shell hopes to pick up the Devonian at around 15,000 ft. at this location. But there is doubt among some Delaware Basin "experts" that 15,000 ft. at this spot will be deep enough.

Conoco thinks it will hit the Ellenburger lime at around 17,000 ft.

What makes these two wildcats so significant is this: If oil production is proved in either the Devonian or the Ellenburger, a major deep-drilling play is sure to come. The Delaware Basin might actually be turned into another Midland Basin, which got new life after deep discoveries several years ago.

Many geologists feel there is no real reason why the basin shouldn't afford just as good opportunities for accumulation of oil as the Midland Basin. The Delaware Basin has the same geological development, the same structural conditions.

"But we just haven't been able to find the [deep] structures," geologists say.

A geologist with a major company, who has worked in the area since the late 1920s, says:

"The Delaware Basin compares with the Midland Basin of 10 to 12 years ago. At that time very few people thought the Midland Basin had much possibility, because the formations were so deep it would be uneconomical to drill them. That was wrong. I think history will repeat itself in the Delaware. Ten to 15 years from now we might have as much or more oil there than in the Midland Basin."

The Delaware Basin produces today mainly from the Delaware sand (Upper Guadalupe series of the Permian), from 1,000 to 5,500 ft.

There are from 20 to 30 drilling rigs running in the Delaware Basin just about all the time. About 95% of them are seeking pays in the Delaware sand.

Most wells drilled in the basin get at least a show of oil from this series of sands. Whether the wells can produce or not depends primarily on the nature of the formation encountered.

If it's clean, coarse, and has a yielding porosity, it produces. But if it is fine-grained, mingled with shale, and of poor porosity, commercial production is usually not realized.

On the west side of the basin, the Delaware sand is found near the surface, from about 1,000 ft. down. On the east it lies at about 5,500 ft.

Wells produce about 10 to 15 b/d of good, sweet crude, and are usually long-time producers.

Formation fracturing hasn't yet made any real headway among Delaware sand wells. Operators say the fracturing might shoot production up to as much as 300 b/d on some wells, but they won't "hold" it.

The Wheat field, of Loving County, is a good example of Delaware sand production: Discovered in 1925, the field produces from an average depth of 4,200 ft. It has made almost 13-million bbl. of oil, and is still producing at the rate of 400,000 bbl. annually.

Geologists say the future potential of the basin lies in several deep source beds, from perhaps 12,000 to 15,000 ft., or below.

"When you think of wildcatting in the Delaware Basin," says one geologist, "you're looking at a 12,000- to 15,000-ft. well—maybe deeper—with no background of good production."

"We might be ten years from full exploration of the deep zones," says another geologist.

One geologist thinks it is entirely possible that there are some very pronounced structures in the deeper, older beds—the pre-Permian, with the Devonian and the Ellenburger as the chief zones.

A lot of the experts think oil will have accumulated in porosity-type stratigraphic traps in the Delaware, because of the variance in sands between coarse and fine, and because of the mixture of silty shale. In many places within the basin, impermeable

shale is mixed with fine sand, and this would halt the natural flow of oil updip through areas of coarser sand and less shale.

Also, there are apparently gentle subsurface "terraces" across the basin, which provide a good chance for oil accumulation where the upper end of a terrace coincides with a layer of nonporous sand and shale.

"I look for production at the base of the Permian and at the top of the Pennsylvanian," predicts an independent petroleum consultant. That would be in the 10,000-12,000-ft. range.

The Delaware Basin was formed in the late Pennsylvanian era, and accentuated (changed) during the Permian era. It is roughly 100 x 150 mi. in extent and contains sediments of thick sandstones, black shales, black limestones, anhydrite, halite, and potash. The sandstone is interbedded with silty shales in addition to a few silty limestones.

The Captain Reef, which virtually encompasses the basin, and which hales back to the late Permian age, is a sharply vertical structure, measuring from 1 mi. to 3 mi. across.

Originally, the Delaware Basin, the Central Basin Platform, and the Midland Basin to the east, were all one vast sea—the origin of the Permian Basin. But the Midland and Delaware basins sank below the Central Basin Platform, with the Delaware Basin dropping deeper than the Midland. The Delaware's sea, the last to retreat from the area, was much deeper than the Midland's.

Sometime during its formation, the Delaware Basin—resembling a big underground bowl in cross-section—was tilted so that its eastern tip is lower than the western side.

But three factors have dampened enthusiasm of some for developing the basin in a big way:

(1) The potential new pay zones lie deep, and drilling costs are high. Some deep tests would cost perhaps $500,000 to $1-million.

(2) There is a lack of deep successes to "correlate" geology. An operator would be "shooting in the dark."

(3) Operators claim there is difficulty in shooting good seismic records. This is an expensive operation, with one company reportedly spending up to $50,000 a month for seismic work. "You lose a sizable part of your exploratory budget right off at this rate," says the company.

Much of the Delaware Basin is overlaid with "valley fill"—a thick deposit of gravel which eroded down during the ages from the surrounding "mountains." This makes it tough to "shoot through" with seismic equipment in order to trace the ancient patterns of the lower beds.

Despite the fact that both the Conoco and Shell wildcats now under way are based on seismic data, other operators say they lack "satisfactory" records for the basin, generally.

In the Midland Basin, oil men know that the deeper, pre-Permian formations follow generally the same convolutions as the shallower horizons. If you find a likely structure in the shallow sediments you probably will find the same thing farther down. But it is not known whether this holds true in the Delaware Basin.

"With improvement in seismic techniques," says one geologist, "the seismic companies will eventually find a way to map the basin. And when they do, they'll find structures—big structures."

Some geologists think operators will form combines or units to drill in the basin and help spread the cost.

Of course, a good strike could touch off a lot of cooperative deals among operators.

Shell's wildcat in Winkler County, Tex., has already logged a significant oil show at the top of the Pennsylvanian, from 13,612-40 ft.

It flowed 94¼ bbl. of 64-gravity condensate on 21-hr. test. Gas flow began at around 8-million cu. ft. daily but dropped quickly to about 700,000 cu. ft. daily.

This same well, earlier, showed oil up the hole in the Bone Spring, just below the Delaware sand, but the formation was thin and oil wasn't present in commercial quantity. The Bone Spring corresponds to the Clear Fork formation farther east.

SHELL WILDCAT, 1 University 17-A, in Winkler County, Tex., will go to 15,000 ft. to test the Devonian.

Early this week, drilling was proceeding slowly.

Several times Shell has had trouble with gas cutting the drilling mud, and has had to suspend drilling for days at a time to recondition mud. There has also been some trouble with lost circulation, with mud escaping into the formations.

Shell is reluctant to talk too freely about its seismic information around the location of the 1 University 17-A. There is a considerable amount of open acreage in the area, and the test is thus somewhat "sensitive." But seismic work produced enough information for the company to spot an anomaly below the surface which indicates a possible buried anticline.

Conoco's wildcat, in Lea County, N.M., is the fourth drilled by the company in this area. Only one has ever reached the Devonian, and it blew out and caught fire.

The 4 Bell Lake Unit has been programmed to permit the use of 5½-in. casing, or larger, to the top of the Ellenburger lime, which is in the Ordovician series much deeper than the Devonian.

One well drilled earlier by Conoco in the same area is producing on pump from the Bone Springs, just below the Delaware sand, from about 8,700 ft. Another well reached the Pennsylvanian at around 12,900 ft. and was completed as a gas well.

The one well that reached the Devonian, at around 15,000 ft., blew out and caught fire before a full evaluation of the hole could be made. There is some optimism, however, that this well might have made an oil well had the accident not occurred.

On the 4 Bell Lake Unit, which early this week was drilling toward the Ellenburger lime, the plan is to drill to total depth of around 17,000 ft., and log the entire length of hole. No drill-stem testing or coring is planned on the way down.

Even if the Shell and Conoco wildcats fail to find deeper production in the Devonian and Ellenburger, operators feel a deep-drilling play will still come in the Delaware Basin, and perhaps soon.

As one division geologist for a major oil company puts it:

"Nearly everybody recognizes the potential of the Delaware Basin. It's like a sleeping giant that hasn't flexed its muscles yet. Everybody's touchy about it.

"It has attracted waves of attention from the industry. We're like a bunch of yellow jackets on a tree limb. Every time something happens we bristle our wings and get ready to swoop down."

Gulf's Swensrud tells API . . .

Small Discoveries Are Vital

This country has been able to achieve a continually rising level of proven oil reserves and productive capacity only because of a huge accumulation of relatively small discoveries, says Sidney A. Swensrud, chairman of Gulf Oil Corp.

This has been a remarkable achievement, he told members of the American Petroleum Institute's production division, meeting in Columbus, Ohio, last week. And deeper drilling, improved technology, increasing expenditures, and incentives have all played a part.

He pointed out that this country has, so far, produced and consumed about 60% of all the oil of the world. And he emphasized that it is a tremendous job for the oil business to keep up with the trend of demand.

"When we think that every 24 hours in this country we use up almost 9-million bbl. of oil, it means that a 100-million-bbl. field is only enough to take care of about 11 days. Anyone in the production end of the business knows how tough it is to find a 100-million-bbl. oil field."

But the large integrated companies have not been able to increase their production as fast as the rest of the industry, Swensrud said.

Only through the efforts of thousands of firms and individual operators has the job of keeping up with demand been done, he added.

From 1945 to 1955, the 17 largest integrated companies showed an increase in their net crude oil production of 28%, as against an increase for the industry as a whole of 45%.

"These 17 companies in 1945 accounted for 48.6% of total U. S. crude production," said Swensrud. "But by 1955 this percentage had shrunk to 42.8%.

"This may surprise some people. But it should not surprise an oil man who knows what a vast and varied amount of effort and ideas must go into the massive over-all job of acquiring leases, doing geological and geophysical work, raising money, promoting wildcat wells, and getting them drilled, watched, and tested, in order to find the thousands of small fields as well as the hundreds of big ones which must be found to keep us going."

Furthermore, crude prices have not kept pace with increased costs of finding and producing oil, he said.

"Surely it is a great tribute to the industry's efficiency, skill, and technology," he said, "that it has been able to accomplish such an enormous task of crude-oil discovery and development, along with expansion in all other ends of the business, with less than a 10% increase in prices in the last eight years.

What the oil industry is doing to a considerable degree is selling out its older, lower-cost reserves at less than present replacement costs of discovery, development, and production.

"In the long run, however," said Swensrud, "prices obviously must be high enough to cover the costs of replacement."

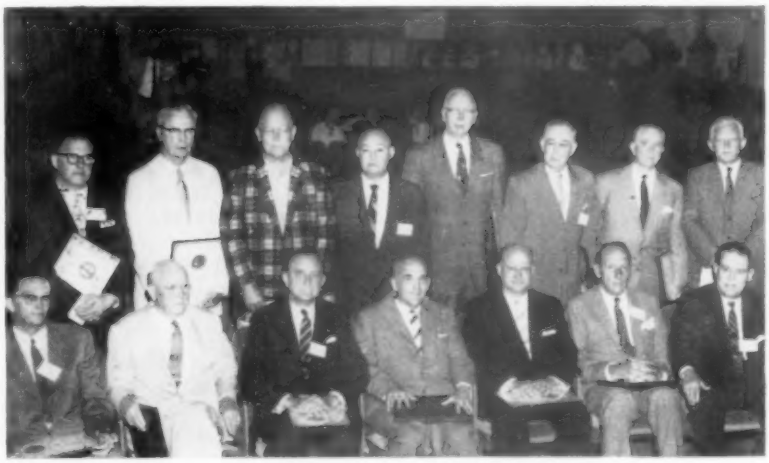
The oil industry is kept "on the go looking for more oil, turning it into the right products, and getting it where it belongs," he said.

Last year the U. S. used around 8.4-million b/d of petroleum. This year, it may use 8.7-million or 8.8-million b/d.

"If, as indicated, the rest of the free world this year uses something like 6.7-million b/d," said Swensrud, "the total will be about 15.4-million b/d. This would be an increase over 1955 of about 700,000 b/d."

Swensrud says this "sounds like a big increase for 1956—and it is. In the last five years, free-world consumption of oil has increased almost 50%, from 10.2-million b/d in 1950 to 14.7-million b/d, 900,000 b/d each year.

"In 1955 the free-world increase over 1954 was almost 1.5-million b/d."



PESA Honors Its Past Presidents

At its recent 21st annual meeting, the Petroleum Equipment Suppliers Assn. honored the men who have served as its presidents since the association's inception in 1933. Those who received plaques are:

Front row (l. to r.): W. L. Childs, Jr., who accepted for his father, W. L. Childs, Reed Roller Bit Co., PESA president 1933-34; J. A. Crawford, Youngstown Steel Products Co. of Calif., 1934-35; A. W. McKinney, National Supply Co., 1948-49; F. M. Mayer, Continental Supply Co., 1951-52; A. G. Evans-Lombe, Parkersburg Rig & Reel Co., who accepted for J. M. Crawford, of Parkersburg, 1937-38; Rainey Elliot, Jones & Laughlin Supply Div., current PESA president, who accepted for J. L. Shakely, formerly of the same company, 1938-39; and F. F. Murray, Oil Well Supply Div., 1942-43.

Back row (l. to r.): M. E. Montrose, Hughes Tool Co., 1955-56; D. D. Bovaird, Bovaird Supply Co., 1953-54; M. B. Jones, S. M. Jones Co., 1952-53; T. Sutter, Baker Oil Tools, Inc., 1950-51; G. A. Tompson, Bethlehem Supply Co., 1949-50; F. J. Spang, Spang & Co., 1943-45; W. D. Wilson, Wilson Supply Co., who accepted for E. W. Gildart, Norvell-Wilder Supply Co., 1940-41; and Wharton Weems, current PESA treasurer, who accepted for A. B. Judd, formerly of Republic Supply Co., 1947-48.

Plaques were also awarded to these past presidents who did not attend the presentation: J. A. Geismar, National Supply, 1935-36; W. J. Morris, Continental Supply, 1936-37; E. S. Dulin, Byron Jackson Co., 1939-40; E. W. Miller, formerly of American Iron & Machine Co., 1941-42; H. H. Glen, Emsco Mfg. Co., 1945-47; and R. S. Durkee, Lane-Wells Co., 1954-55.

The meeting was held at Boca Raton, Fla.

Pick YOUR Number –Win New Friends For Your Business!

Here is a simple way to make new friends for your business—and at the same time perform a real service for your industry.

You may ask "does my industry need help?" The answer is *yes*. For today it is urgent that the public appreciate more thoroughly the job oil men do. People must continue to feel the oil industry can best serve *them* by remaining privately managed, fully competitive, and free from excessive governmental control.

You can help in this vital public information program by joining your local Oil Industry Information Committee—made up of oil men from your community. Right now, 33,299 oil men like yourself are active. Aided by the OIIC District Office, your group can provide films, speakers and demonstrations for civic, social and church needs—in addition to classroom materials for high schools.

Joining in this effort will mean real help for your industry. But *you* will also profit. You'll enjoy the great personal pleasure of working with other members of your community. It will mean winning many new friends for yourself—and for your business as well.

So pick *your* number on the map above—and get in touch with the OIIC District Office in your area today! Why not do it *now* while you have the address handy.

AMERICAN PETROLEUM INSTITUTE

50 West 50th Street, New York 20, New York

Oil Industry Information Committee District Offices

1. *Rhode Island, Conn., Mass., Vt., New Hampshire, Maine*
   419 Boylston Street
   Boston 16, Massachusetts
2. *New York, New Jersey*
   1270 Sixth Avenue, Room 1913
   New York 20, New York
3. *Del., Pa., Md., Va., W. Va., Dist. of Columbia*
   1322 Broad-Locust Building
   Philadelphia 2, Pennsylvania
4. *N. Carolina, S. Carolina, Georgia, Florida*
   26 Cain Street, N.W.
   Atlanta 3, Georgia
5. *Kentucky, Ohio, Tennessee*
   506 Schmidt Building
   Cincinnati 2, Ohio
6. *Illinois, Wisconsin, Michigan, Indiana*
   8 South Michigan Avenue
   Chicago, Illinois
7. *Missouri, Iowa, Nebraska*
   1459 Dierks Building
   Kansas City 6, Missouri
8. *Minnesota, N. Dakota, S. Dakota*
   1110 Rand Tower
   Minneapolis 2, Minnesota
9. *Texas, New Mexico*
   318 North St. Paul Street
   Dallas, Texas
10. *Arkansas, Louisiana*
    Whitney National Bank Building
    New Orleans, Louisiana
11. *Alabama, Mississippi*
    670 Milner Building
    Jackson, Mississippi
12. *Kansas, Oklahoma*
    308 Oil Capital Building
    Tulsa 3, Oklahoma
13. *Colo., Montana, Wyoming, Idaho, Utah*
    526 Farmers Union Building
    Denver, Colorado
14. *Wash., Oregon, Calif., Nevada, Arizona*
    510 W. 6th Street
    Los Angeles 14, California

What's New / IN EXPLORATION, DRILLING, PRODUCTION

Urges Gravity Method In Hunting Reefs

The gravity method has proved its ability to map underground reefs in Illinois, Indiana, Michigan, and Ontario, and operators should consider its use in hunting for Niagaran reefs in the Appalachian area, says Richard A. Pohly, president of Pohly Exploration Co., Tulsa.

He told members of the American Petroleum Institute's production division, meeting in Columbus last week, that many reef problems of the Appalachian area can advantageously utilize gravity surveys.

"It would . . . appear that the gravity method should provide an excellent tool for locating Niagaran reefs wherever they may occur in the Appalachian geosyncline," says Pohly.

He points out that approximately 40 reefs have been found by drilling on gravity anomalies in Indiana, Illinois, Michigan, and Ontario.

The method has been successful in other areas in mapping faults and anticlines wherever density contrasts between adjacent beds are sufficient to produce interpretable anomalies, says Pohly. Such a condition is known to exist in the Appalachian area.

•

Offshore Basins Promising

California's offshore basins, bounded by the Channel Islands, appear to offer the state's most promising source of new large oil reserves, says Eugene L. Davis, consulting petroleum engineer and geologist, of Long Beach.

He told the Independent Petroleum Assn. of America at its midyear meeting in Los Angeles this week that major oil companies and some of the large independents are "eagerly exploring these areas."

Davis says that since these offshore basins are geologically similar to the Los Angeles, Ventura, and Santa Maria basins, it is not unlikely that oil fields will be found in them which are of the same order of importance as some of the structures in those mainland basins.

But there is one disquieting element in this possibility, Davis cautions: Unless the situation changes, the small independent operator will have no place in this development.

"Since these operators have held a very important place in California production to date, it is to be hoped that they can work out the necessary financing to take part in this development."

He says it is hoped the leasing terms specified by state and federal governments will be such as to "encourage their participation in developing this new and promising oil province."

•

Allowable Meeting Called

Louisiana's conservation commissioner, John B. Hussey, has called a meeting of oil-industry representatives for May 17 in Baton Rouge to try and work out an equitable allowable plan.

Louisiana last week cut its allowable for May 38,902 b/d to 749,866 b/d. April's production was 788,768 b/d.

Hussey earlier had called for formation of an "Industry Allowable Committee" to help him cope with the problem of steadily rising production from new wells (PW—Apr.13'56, p16).

Meanwhile, executives of the severance-tax division of the Louisiana Dept. of Revenues have estimated that the allowable cut for May will mean a reduction in payment of oil severance taxes by $9,000 a day. The severance tax ranges from 18¢ to 26¢ a bbl., depending on its grade.

Under the state's present tax structure, all oil severance taxes go to the public schools after the parish from which oil is "severed" receives 20%, up to a maximum of $200,000.

•

Byrd Oil Corp. Sold

Controlling interest in Byrd Oil Corp., Dallas, held by D. Harold Byrd, has been sold to Alan M. Abernethy, Toronto, and state Sen. James J. Crisona, of New York.

No consideration was disclosed, but the deal was consummated by Byrd selling a majority of his stock.

The company owns 120 producing wells with substantial oil and gas reserves in Texas, New Mexico, Louisiana, and Oklahoma.

•

Gridoil Freehold Leases Ltd. will spend $3.5-million to drill 63 wells on the fringe of the Williston Basin in southeastern Saskatchewan. The company has let contracts for the first 22 wells in locations with proven or semi-proven reserves.

It has leases located in Hastings, Frobisher, Nottingham, and Steelman fields, Saskatchewan.

•

A safe new means of plugging drill pipe if a well starts to unload during drilling or workover operations is claimed by Otis Pressure Control, Inc. The equipment consists of a nipple built on drill-pipe dimensions and a removable plug choke, which seals off in the polished bore of the nipple.

The nipple can be installed in the string near the bottom with the plug in place to allow flow downward through the drill stem if there is a possibility of a blowout. The nipple may also be run in as part of the string when pipe is tripped, or the nipple and gate valve can be stabbed onto the joint in the rotary, the plug pumped in, and the string run to bottom. The plug can be retrieved on a wire line under pressure, according to reports from the company.

•

More than $500,000 in bonuses were bid for some 18,000 acres of lands on the Wind River Indian Reservation at a sale at Ft. Washakie, Wyo. last week. Stanolind Oil & Gas Co. offered $208.28 per acre for an 807-acre tract offsetting a small discovery which it completed in 1947. This was the highest bid of the sale. Kewanee Oil Co. paid $89.55 an acre for a 640-acre tract in the same area. Average price for all acreage leased was $26.27 an acre.

The lands lie roughly midway between the Winkleman and Land fields, in the Wind River Basin.

•

Two important oil lease sales will be held by the Alberta government during May. On the 17th, drilling rights will be offered on 172,000 acres in 25 different parcels in the Peace River, Edmonton, and Calgary districts, and in the extreme southwest sector of the province. On May 24, more than 24,000 acres will be offered in the Bonnie Glen, Erskine, Fenn-

Big Valley, Joffre, Pembina, Sturgeon Lake, Sturgeon Lake South, and Sundre field areas. More than 11,000 acres in crown reserve wildcat territory will also be offered, plus 44,357 acres in Provincial Parcel No. 50, in the Alhambra provincial reserve.

•

Drilling Highlights

Utah—The Texas Co. and Superior Oil Co. each have new successes in the Aneth area of the Paradox Basin in San Juan County. Superior reported an apparently commercial drill-stem test from its 1-A Navajo, a north offset to Texaco's recent 1,700 b/d discovery. At latest report it flowed 209 bbl. in 8 hours in ½-in. choke. Texaco, testing its second well, reported flows in excess of 50 bbl. per hour. Its 1-D Navajo was coring below 5,897 ft. last week.

West Texas—Stanolind Oil & Gas Co. reports significant recovery from an extension well: Its 23 Sealy Smith "A" in the Sealy Smith area of Winkler County recovered 1,800 ft. of 40-gravity oil plus 5,460 ft. of heavily oil- and gas-cut water blanket on drill-stem test of the Ellenburger from 12,246-389 ft. The well extends production in a second zone of the North Monahans field ½-mi. northwest. Operator is drilling at depths below 12,417 ft.

Alabama—General American Oil Corp. et al have completed 1 Birty Walker, 1 mi. north of the Citronnelle field discovery in Mobile County. It flowed 336 bbl. of 46-gravity oil in 12 hr. through ½-in. choke, and was making 30 bbl. hourly at the end of the test. Production comes from a series of perforations from 10,866-987 ft. Gulf Oil Corp. is taking the oil by truck to Mobile.

Kansas—Cities Service Oil Co. has tested an apparent discovery in the Pennsylvanian in Decatur County, 6 mi. north of Monaghan field. The 1 Warner, 10 mi. northeast of Oberlin, recovered 2,845 ft. of gas-cut oil in 1 hour from 3,312-45 ft. Flowing pressure was 1,050 psi. Oil is about 31-gravity.

Colorado—Cabeen Exploration Co. has an apparent gas discovery with its 1 Blevins, 10 mi. northeast of Walden, in Jackson County. The well has been shut in, however, following difficulties encountered during attempts to test. Flow has been estimated at up to 8-million cu. ft. from 1,486-533 ft. in the Cretaceous.

"...rotary table expert...huh!"

Another record in drilling activity is shaping up for this year . . . and the greatest gain in wells drilled will be made by Lone Star Steel's neighbors in Texas, Louisiana, Oklahoma, Kansas and nearby states. The use of Lone Star pipe is setting a new record, too.

Lone Star's casing, tubing and line pipe are manufactured to API standards. The huge Lone Star Steel plant operates for the special convenience of Joe Roughneck, heart of the oil industry. Whether Joe is doing a rugged job on a rig in the field . . . or whether he has become president of his company . . . he's the man who knows oil and pipe. He knows Lone Star is his dependable supplier.

Neighbor, wherever you are, specify Lone Star and we both get a good deal.

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PETROLEUM COMMENTS / By W. M. Jablonski

Middle East Oil: Not One, but Four

Many people—both in and out of the oil industry—mistakenly regard Middle East oil as one unit.

The tendency is to consider a crisis anywhere in Middle East oil as a crisis throughout the Middle East oil area. Nothing could be more misleading.

* * * *

In fact, the more familiar one becomes with the four main Middle East oil producing countries— Kuwait, Saudi Arabia, Iraq, and Iran—the more apparent does it become that about the only sentiments the four share in common are distrust, dislike, or jealousy of one another.

If one of them were to halt oil production because of some crisis or another, the likelihood is remote indeed that the other three would be willing to pull its chestnuts out of the fire. On the contrary. Chances are that the others would be quick to profit from the opportunity to make up the extra production, and thus gain the extra oil revenues—just as they did, indeed, during Iran's nationalization crisis. (Kuwait nearly tripled its production during Iran's shutdown; Saudi Arabia and Iraq both nearly doubled).

* * * *

All four producing countries have different interests and different ambitions:

• Kuwait (production about 1.1-million b/d, jointly by Gulf Oil and British Petroleum) is a British protectorate. It is generally rated as politically the most stable of the Middle East oil lands. This tiny sheikhdom has an indigenous population of only about 100,000 (swelled currently to double that figure by influx of construction workers from all over the Persian Gulf). It has nothing much else: no local water, no food—nothing but oil. Sitting on top of fabulous oil pools, however, Kuwait is one of the prize pieces of real estate in the world. Coveted from all sides, the sheikhdom owes its very existence to British protection —and knows it. Anti-British propaganda has had little appeal. Kuwait is not even a member of the Arab League.

• Saudi Arabia (production about 1-million b/d, by Arabian American Oil Co.) is not on good terms with Kuwait, nor with the various British-protected states along its outer rim (Qatar, Abu Dhabi, Muscat and Oman, Hadhramaut, and Aden). Relations with Iraq are also strained by a long and bitter feud between the Saud family and the ruling Hashemite family of Iraq (and Jordan), whom the Saudis expelled from control of Mecca and other holy cities in western Arabia shortly after World War I. Saudi Arabia is backing Egypt against Iraq for leadership of the Arab world (though how much longer the Saudis, who, because of their oil revenues, have far larger readily spendable income than Egypt, will be willing to play second fiddle to Col. Nasser remains to be seen).

• Iraq (production about 700,000 b/d, jointly by British, American, Dutch, and French companies) is more moderate than its neighbors. It is the only Arab state to have joined the Baghdad Pact, bitterly opposed by Saudi Arabia and Egypt.

• Iran (production about 400,000 b/d, by an international consortium) has nothing in common with the other three. It is not an Arab nation. Most Iranians don't even consider themselves part of the "Middle East," but of Asia. Though Moslem, Iran belongs to a minority religious sect (Shia) strongly opposed to the Sunni Moslems of most of the Arab lands. And Iran is not likely to forget how it was left in the lurch by the other oil producing contries during its nationalization crisis.

* * * *

Each of these countries has huge potential producing capacity. Each has proved reserves as great as, or greater than, the entire United States. Any one of them could, in fact, easily sustain a production equal to the Middle East's entire oil output today.

Iran actually has shut-in developed capacity of some 300,000 to 400,000 b/d left over from prenationalization days, which could be opened by a twist of the valve. Output in Kuwait and Saudi Arabia could be stepped up quickly. Iraq could be, too, though construction of additional pipeline outlets from its inland fields would take more time.

All are vying, in their own self-interest, for expansion of their production and of their all-important oil revenues.

* * * *

It should not be overlooked that, while oil importing nations of the free world are dependent on Middle East oil, the Middle East producing countries are also highly dependent on these exports.

Without the steady inflow of huge oil revenues, the Saud family of Saudi Arabia would be merely rulers of bankrupt, desert tribes. Kuwait would slump back to dependence on goats and smuggling. Iraq and Iran depend on the oil revenues for day-to-day functioning of their government, and for realization of bold plans of economic development—irrigation, roads, etc.—and modernization. These plans and works must go on. At this point, thus, there is a greater, clear-cut mutuality of interest between individual Middle East oil producing countries and the importing countries than among the producing countries of the Middle East themselves.

When the pressure's on

Another trainload of huge Pressure Vessels leaves Sun Ship's Chester plant.

If you're ever in the market for large high-pressure tanks—that's a good time to think of Sun Ship.

Construction of these giant tanks . . . whether for operating or for storage under pressure . . . whether for land or marine installation . . . has been an important part of Sun Ship's work for the petroleum and chemical industries for many years.

The trainload shown above, which includes tanks of 55,000-gallon and 30,000-gallon capacities—used for storing L.P.G.—typifies Sun Ship's experience in building large tanks which must carry pressure.

Shipments of these and of other huge vessels in carloads or trainloads is a familiar sight at the busy Chester plant. Fractionating towers, stills, catalytic cracking cases, reactors and other specialized equipment are turned out at Sun Ship's great and versatile plant on the Delaware, from which shipment can be made either by rail or by water.

Sun

SHIPBUILDING & DRY DOCK COMPANY

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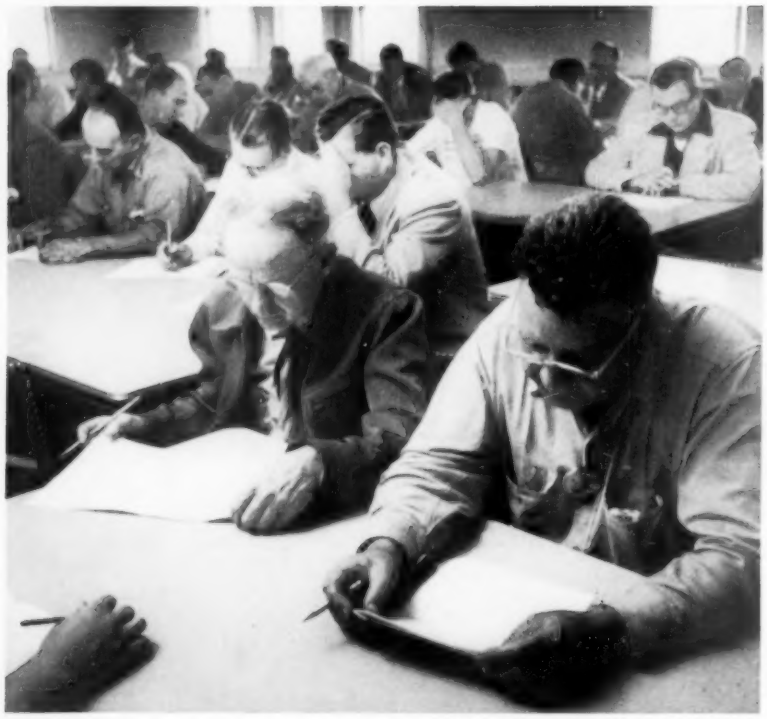


Employee Opinion Poll . . .

. . . taken by Standard of California produced this typical employee thinking . . .

FAVORABLE

- 74% think company is better managed than most.
- 55% think company is very much interested in them.

86% think they are well informed about company.

UNFAVORABLE

- 31% don't think suggestions always get fair consideration.
- 25% think their work is poorly planned.

Study of such opinions has led California Standard to recognize the great benefits that come when . . .

Management Opens Door to Criticism

The need to find out what others think of you is winning a high priority in oil thinking. It's getting new stress from both independents and majors as a basis for sound decisions at all levels. Example: California Standard is now studying 65,000 pieces of advice from its employees.

This week the company's personnel department is digging into an analysis of that many "additional comments" given by 16,000 employees in an opinion poll. The actual survey was made by the parent company and seven affiliates last fall, as a follow-up program to a similar project conducted back in 1951.

The job of briefing managers on statistical data has been completed. And the company has now wound up group meetings with employees to discuss the results, which were generally encouraging.

Standard's poll is basically a large-scale version of what many smaller oil companies are doing in their growing emphasis on "good communications" down the line.

The formalized opinion poll Standard uses serves to point up the principles of management "self analysis" that any independent, or even individual supervisor, can use on an informal basis. The principles:

(1) Find out what your people are thinking.

(2) Pin down the good and poor operations.

(3) Act on the results.

These principles are behind Sun Oil Co.'s 1955 survey of employees at the Marcus Hook refinery and in the marine department. And they were carried outside the company walls last year by Continental Oil Co. in a survey of the Ponca City public (PW—Sep.2'55,p20). The Oil Industry Information Committee goes so far as to poll the entire nation on how people view oil operations (PW—Feb.17'56, p22).

The way the poll fits into the communications picture is explained by a Standard personnel manager this way: "The ideal relationship between management and employees doesn't require a poll. But that is unrealistic. In employee relations, you often face questions on communications and policy. To make sound decisions, you need to know how employees feel about their supervisors and the company. And our feeling is, why not ask them?"

California Standard got its advice by asking all employees to fill out a 36-question survey, and make additional comments. Although participation was voluntary, the company got an 81% response. Most questionnaires were filled out in 150 group meetings on company time. Workers and executives, up to vice-presidents, were mixed at these meetings.

Every effort was made to keep the poll a secret. Management thought it would get better answers if everyone were "hit cold," with no chance to think over the questions.

Questions covered company management, communications, employee benefits, job satisfaction, working conditions, and supervision. Requests for written comments were on what employees liked best and least about Standard, and on what questions they find hardest to answer about the company.

Standard thinks a complete survey of all employees is much better than a cross-section poll, of perhaps 10%. Reasons: Although the over-all results don't differ much, a complete poll leaves no possible doubt on how the employees feel. Allowing everyone a chance to participate gives employees

more confidence in the poll. Having been able to express their opinions, they are more likely to receive kindly any policy changes that might result. And a cross-section eliminates most of the valuable write-in comment.

Standard's completed questionnaires were turned over to the California Institute of Technology for tabulation on IBM machines. Cost of taking the poll and printing the results was $40,000—not counting time spent by company personnel.

Although management is pleased by the generally favorable opinions of employees, it feels the 65,000 write-in comments are the most valuable result of the poll. About 80% of the employees gave extra opinions, a 50% increase over the 1951 survey. And the number of comments per employee was up. The personnel department thinks this happened because employees recalled that their comments in the 1951 poll had been kept anonymous and that there had been no recriminations.

There was an ample supply of critical comments to let management zero in on some weak points, although the percentage of such comments dropped from 1951. In one department, for example, the stenographers complained that their bosses were poor dictators and often had no idea where to start.

A typical complaint was that managers did not organize their work and that they were apt to keep subordinates standing around waiting for a decision.

In another department, men objected to the fact that "nobody knows what the other guy is doing."

Other typical write-in comments:

"I seldom get to stay on a job long enough to complete it to my satisfaction."

"Praise is not used to advantage."

"They spend $1,000 to save a dime."

Statistical data from the poll shows improvement on some important counts, although in some cases the gain was slight. A higher percentage than in 1951 now think: (1) They are well informed about the company; (2) communications have a good balance; (3) there is freedom to talk to the immediate supervisor; (4) safety is being stressed enough; and (5) supervisors are doing a good job.

On two other counts, Standard suffered a slight setback—employee opinion of how well the company is managed, and of how good the working conditions are.

The company is especially cheered by its gains in the field of supervision. It chalks these up mainly to a conscientious effort by supervisors to learn more about company policies and training methods, as a result of the 1951 poll.

Putting survey results to work for the company is the heart of Standard's program. First move was to feed the data back to employees to keep them "informed." After management had been briefed, the results were mailed in booklet form to all employees who participated.

Then small group meetings were held on company time to discuss the write-in comments. Available for this were breakdowns of comments from each affiliate, department, or unit. Each group had a discussion leader, either its regular manager or an outsider (in some cases it was felt an outsider would let employees talk more freely). Charts showed each group how its answers compared with overall answers and with those of the group having the highest "plus" rating. Emphasis at the meetings was on how to make improvement.

Some policy changes have already been made because of the poll. In the department that had complaints about poor communications, for example, weekly meetings have been organized and are starting to bring everyone up to date.

But the personnel department thinks more important benefits will come from its current analysis of the survey, slated for release next fall. Says one official, "The possibilities for doing research on the answers are almost unlimited." He believes there are some "interesting correlations" to be made between groups of answers. Sample: Members of a department with many "gripes" also show great interest in working for the company.

The department believes its new studies should prove even more valuable than those made of the 1951 poll. That survey resulted in a speedup in the release of news to employees, an enlargement of the communications division, publication of four booklets on better supervision, meetings on human relations for the marketing department (a new program), and other changes.

The greatest good, Standard's management believes, will come in the stimulation of new thinking about company operations—by all employees.

The company feels that a written comment such as, "I don't know what is expected of me," gives all supervisors something to think about.

Finally, employees think that polls in themselves are a sign of good management. More than 80% said they think polls are worthwhile.

What's New
IN MANAGEMENT

The continuing search of drilling contractors for more efficiency is leading Great Western Drilling Co., Midland, Tex., to start a 6-week training school for its personnel.

Men will have 96 hours of classwork and 192 hours of practical work in shops and on rigs. Visual aids and movies will be used. The "faculty" will be factory representatives, Great Western supervisors, and other oil drilling specialists.

Says Ray Bromell, assistant to Great Western's president, "The main idea is to give rig personnel a chance to learn, and to help them earn a more secure place with the company. It's part of our program to give workers a priority in jobs, based on the degree of their training."

•

Oil and gas companies on the Texas Gulf Coast that are interested in electronic brainpower are getting a big assist from the University of Houston.

The school is establishing a fully staffed and equipped computing and data-processing center on its campus. And last week it held its first seminar —on analog computers. Goal of the center is to help all industry by training present personnel and by turning out students schooled in high-speed computer techniques.

•

Pacific Western Oil Corp. last week changed its name to Getty Oil Co. Reason: The new name is shorter and more significant in the industry, according to vice-president George F. Getty II. He says no change in corporate structure is being made.

The company has interests in Tide Water Associated, Skelly, Pacific Western—Iran Ltd., and many other affiliates.

•

Management of Phillips Petroleum last week proposed a two-for-one stock split. And a similar split was voted by Texaco directors.

Phillips shareholders will vote June 15 on the split. At the annual meeting last week they approved an increase in authorized common stock from 20-million to 40-million shares.

Texaco directors formally voted a two-for-one split after shareholders approved an increase in authorized shares from 40-million to 70-million.

SHELL Launches New Safety Series

All over the country people are seeing Shell Better Driving Quizzes like the one on the right and those below.

Behind this new campaign lies Shell's conviction that part of our job—as a major supplier of gasoline and oil products—is to promote driving safety. That's why Shell started the famous "Share-the-Road" club back in the late 1930's. That's why we established the Carol Lane Awards for women's efforts toward traffic safety.

This new safety series urges the reader to test his reflexes, eyesight, knowledge of road signs, driving attitudes. No longer can the reader shrug off a safety message as written for "the other fellow." First indications are that these advertisements actually are helping many drivers think more seriously of their highway habits. That's a sure sign of a better future for all of us.

Can you tell a road sign by its shape?
Read and obey your signs of life!
SHELL OIL COMPANY
How far from the car in front should you be at 50 mph?
Stay Back! Don't Crowd Your Luck!
SHELL OIL COMPANY
See how fast you can move to the brake!
BRAKE
GAS
SHELL OIL COMPANY
Check your driving attitudes
Drive right...enjoy your right to drive
SHELL OIL COMPANY

4

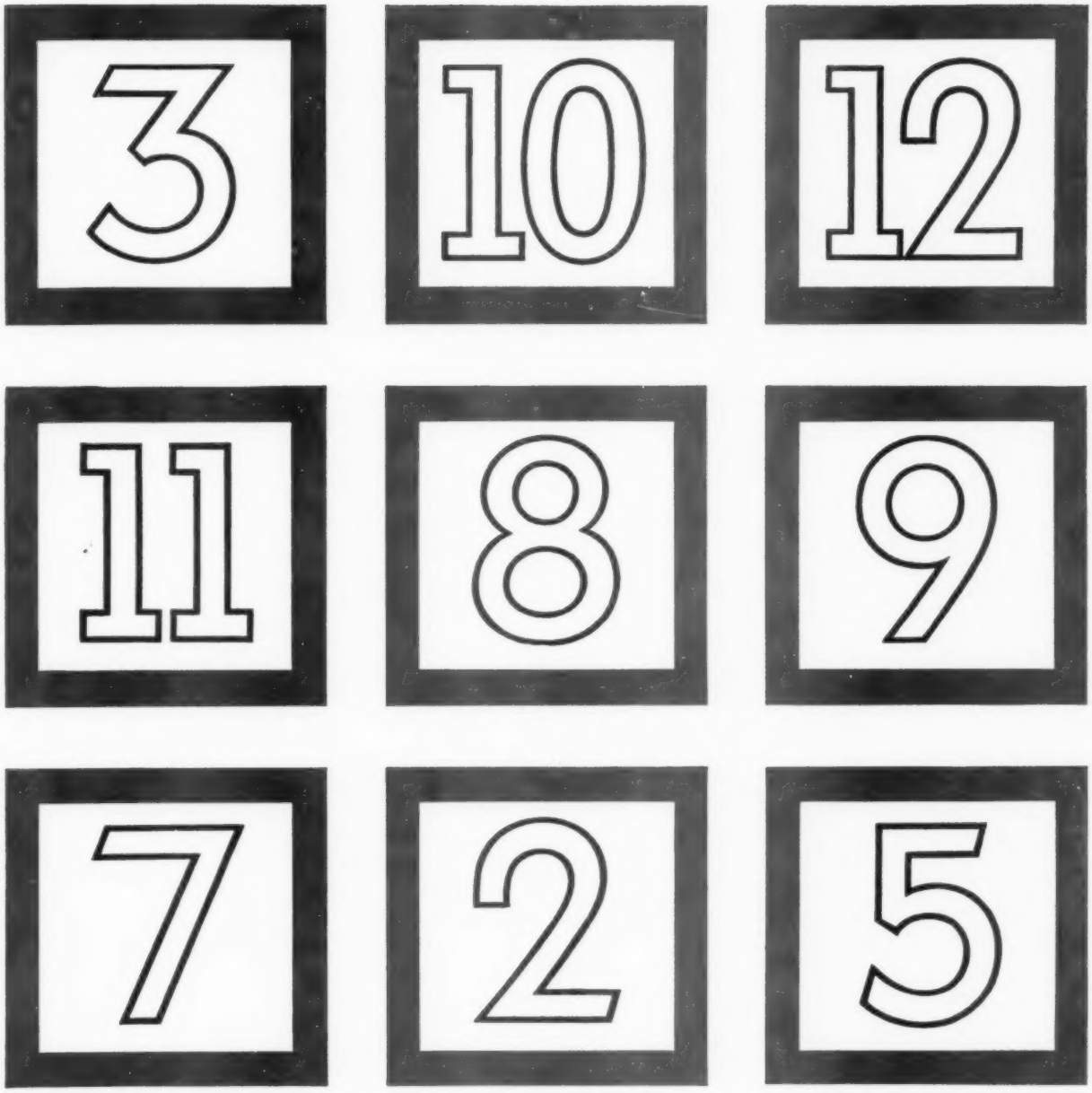
6

1

TRY THIS BETTER DRIVING QUIZ!

It helps you relate your reaction time to safe driving speeds. Others in Shell's public service series on driving safety highlight such factors as courteous attitudes and recognition of road signs.

SHELL



HOW FAST CAN YOU TOUCH EACH SQUARE IN NUMERICAL ORDER?

WITHIN 9 SECONDS? Your reflexes are about average.
WITHIN 7 SECONDS? Very good.
WITHIN 5 SECONDS? Excellent.

MORE THAN 9 SECONDS? YOUR REFLEXES ARE TOO SLOW. DON'T DRIVE OVER 45 M.P.H.*

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*Authority Dr. Herbert J. Stack, Director, Center for Safety Education, New York University

DEPT/Transportation & Storage

Lots of Storage Room Underground

● First detailed survey of U.S. underground oil storage potential shows some states hold big promise, others none.

● Interstate Oil Compact Commission findings, being published this week, will guide nation's security planners.

● For oil men, facing mounting steel and land costs, the new report is sure to have pocketbook significance.

The Interstate Oil Compact Commission has just published the first state-by-state study of geological areas suitable for underground storage of petroleum liquids.

The 104-page report is a sequel to the National Petroleum Council's survey of underground storage feasibility, published Apr. 22, 1952.

The original report outlined the hows and whys of underground storage—and described the major areas in the country where such storage might be developed. But it recommended a more detailed approach, from closer observation points in each state.

Both the Interior and Defense Depts. assigned this follow-up to IOCC. And the commission, in turn, channeled the project to committees within the states. The results, compiled by an IOCC editorial committee, are just off the press this week.

Behind the new study is the conviction of both government and industry that underground storage is safer than steel—and cheaper.

The Defense Dept. would like to see the nation's oil reserves stored in locations least vulnerable to destruction—and least likely to spread destruction should they ignite in either peacetime or wartime.

Salt domes, salt beds, excavated rock cavities, old oil and gas fields, natural cavities, and old mines, quarries, and tunnels are considered much safer than tank-farms. Also, use of these natural-wall containers can put that much more steel into the general supply.

The oil industry is just as anxious as the government is to develop the safest possible storage areas. But another big incentive is that underground storage usually costs less than above-ground storage — and is also easier and cheaper to maintain.

How much cheaper depends upon the type of underground storage available.

The IOCC study says dissolved salt chambers for propane, for example, will cost about $1 to $2 per bbl. for a reservoir of 25,000 to 50,000 bbl. The investment for a similar capacity in steel storage, says IOCC, will run about $20 per bbl. And the per-barrel cost of the salt project will decrease as capacity increases.

The cost of excavated rock chambers, of course, is likely to vary more widely than the cost of dissolved salt cavities, depending upon the type of rock encountered, the excavating-method employed, the location of the project, and the amount of sealing or other preparation necessary. Nevertheless, says IOCC, cost of storage in excavated chambers "probably is $5 to $7 per bbl.," or still considerably less than the cost of steel storage.

Investigation and preparation of permeable formations, mines, quarries, or tunnels will also give a wide cost range. IOCC gives no comparisons. As with steel storage, a big factor in the cost of any underground project will be its proximity to suitable transportation facilities.

Many of the individual state reports in the IOCC study describe transportation conditions, plus other economic problems, in connection with the various storage possibilities listed.

The new study is far from complete. One state report is two sentences long. Others run close to ten pages, with maps, tables, and plenty of statistics.

In general, it appears that state geologists in the major producing areas were able to pore over stacks of drilling and exploration reports and come up with much precise information about their states. Some, also, apparently had enough in their budgets for field trips to supplement the material in their files.

In other states, the geologists involved in the IOCC study could do little more than scan their state maps. One state didn't even have a local geological map. Another simply fed back to IOCC a few generalities that had been put forth in the original NPC survey.

Enough information is supplied about some key producing and marketing areas, however, to give most oil men a broad planning beacon—no matter which end of the business they believe is best for storage.

There are those in the oil business —and among these who helped compile the IOCC study—who believe that the best place for storage of LPG (the product most often stored underground) is right near the field plants where most of it is produced. Market areas are subject to shifting demand patterns, they say. So storage should be located at the "steady" end of the supply line.

Others argue that any products subject to strong peak and off-peak demand, such as LPG and heating oil, should be stored as close as possible to the market areas for which they're intended, so that there'll be no overworking of long supply lines in peak periods—or possibilities of inadequate supplies.

A glance at the study's highlights (table) will show that some of the best storage prospects are attributed to states at both ends of the business.

Furthermore, the IOCC study itself shows that most of the major supply and demand areas also offer a variety of storage prospects. Salt domes, for example, may be listed as the most likely for development. But a given report may also itemize quarries, mines, tunnels, and suitable permeable and impermeable formations.

Several of the state reports, too, toss in voluntary advice to potential operators of underground storage projects.

The Ohio committee, for instance, outlines the legal steps necessary in order to get approval for a project. The Mississippi committee, although giving the prospective operator some good reasons to look over that state, adds the warning about adverse sentiment toward under-ground projects (table). The Michigan committee offers a list of ten reasons why operators should get enthusiastic about moving in. And the Kentucky report even ventures a solution to the problem of growing imports (store imported crude underground, for use when and if U. S. supplies are inadequate).

For those interested in existing underground storage, reports from the states involved usually detail such projects as part of the study.

A few states give narrative-type descriptions. Others use tables. In most cases there's plenty of information on location, depth, formation, capacity, and history, plus references to published data about the projects. A few reports describe projects that were attempted and abandoned.

So far, underground storage projects have been geared almost exclusively to LPG. There are more than 200 such projects in the country today, about 130 of them in Texas. And there are about 20 proposed projects in various stages of development.

Other than military projects, on which information is not made public, the Esso heating-oil reservoir at Wind Gap, Pa., is about the only non-LPG underground storage project in this country. Creole Petroleum Corp. is utilizing earthen storage pits in Venezuela (PW—Apr.27'56,p28). And Sweden pioneered a technique of storing fuel oil in cavities below water-table level—utilizing water both to help contain the product and to help avoid contamination.

This technique, the IOCC study notes, "appears to have only limited application" in the U. S., "until more experience in storing liquid petroleum products in permeable reservoirs is available."

The big drawback is the direct danger to potable water supplies (a danger also present, in varying degrees, in other types of underground storage).

Then, too, as the Pennsylvania report observes, LPG is a lot more volatile than fuel oil. "Because surface installations for the storage of volatile liquids are from 5 to 15 times more costly than for nonvolatile liquids, the incentive is greater to seek less-costly underground storage for the former than for the latter," says the report.

If the need arises, however, the IOCC study will help oil men to find underground locations for almost any product. "Although the underground storage of petroleum and its products other than liquefied petroleum gases has not been undertaken in Illinois," says the report from that state, "there appears to be no reason why gasoline, fuel oil, or even crude oil cannot be stored in this manner if the need arises."

And IOCC hopes its new study will help inspire oil men into feeling the need now. Copies are available, at $1 each. Orders should be addressed to IOCC at P. O. Box 3127, Oklahoma City, Okla.

States Survey Storage Potential

Color denotes states with best prospects.

State	Already in storage	Type of storage	Best potential*	Over-all outlook*
Alabama			Not specified	"Possible"
Arizona			Nothing known	More study needed
Arkansas			Rock	More study needed
California	LPG	Depleted gas pool	Depleted pools	Little interest
Colorado			Old mines	More study needed
Connecticut			2 quarries	Doubtful
Delaware			Rock	More study needed
Florida			Limestone	Doubtful
Georgia			Rock	More study needed
Idaho			Old mines	"Not feasible"
Illinois	LPG	Mined shale, limestone	Rock	Good
Indiana			Rock	Good
Kansas	LPG	Salt beds	Salt beds	Excellent
Kentucky			Limestone mines	Fair
Louisiana	LPG	Salt domes	Salt domes	Excellent
Maine			Old quarries	No evaluation
Maryland			Shale, rock	Doubtful
Massachusetts			Rock	More study needed
Michigan	LPG	Salt beds	Salt beds	"Unlimited possibilities"
Minnesota			Rock	No evaluation
Mississippi	LPG	Salt domes	Salt domes	Water-contamination possibilities "weigh heavily against" future projects
Missouri†	LPG	Mined limestone		
Montana			1 quarry, 2 mines	Suitable for "packaged goods"
Nebraska			Rock	"Possible"
Nevada				Nothing suitable
New Hampshire			Rock	Limited
New Jersey			Rock	"Big possibilities"
New Mexico	LPG	Salt beds	Salt beds	One area "well suited"
New York	LPG	Salt beds	Salt beds	Good
N. Carolina			Clay	Exploration needed
N. Dakota			Permeable formations	More study needed
Ohio	LPG	Rock	Rock	"Possible"
Oklahoma	LPG	Shale, salt beds	Shale, salt beds	No evaluation
Pennsylvania	Heating oil	Old slate quarry	Quarries	"Possible"
Rhode Island			Quarries	Doubtful
S. Carolina				Nothing suitable
Texas	LPG	Salt domes, beds & wells; oil & gas sands; mined shale, sand	Salt domes	"Unlimited"
Utah			Salt domes	"Possible"
Vermont			Quarries, mines	Doubtful
Virginia			2 anticlines	Being considered
W. Virginia			Quarries	Possible
Wisconsin			Not specified	No evaluation
Wyoming			Old mines	Possible

*As indicated in individual state reports.

†Not included in IOCC report.

Westcoast Financing Set

Westcoast Transmission Co., Ltd., will remain under Canadian control, it appears from financing details outlined last week.

A public offering of some $23-million in debentures and capital stock bolstered Westcoast's plan to start selling gas from the Peace River area to Pacific Northwest Pipeline Corp. next year.

The offering capped a private fund-raising program, in which Westcoast sold a block of $83-million in 4⅜% first-mortgage bonds to 22 line insurance companies and to institutional investors, plus $10.5-million in 3-year, 3¼% debentures and $19-million in 3-year, 3½% notes payable in U.S. dollars.

Some 615,000 of the company's 4,511,000 shares of capital stock were included in the $23-million public offering. This was a "package" deal, with buyers getting $100 worth of 32-year, 5½% debentures and three shares of stock for an opening price of $115. About 80% of the offering was made through a group of U.S. securities dealers headed by Eastman, Dillon & Co.

All told, Canadian investors are putting up only about $34-million of the total $315-million involved. But about 64% of the capital stock will be under control of a six-man voting trust, which includes four Canadians.

The trust includes Frank M. McMahon, Westcoast president (PW—Apr.20'56,p34); his brother, George McMahon; D. P. McDonald, Calgary lawyer; Norman R. Whittall, Vancouver industrialist; Lloyd S. Gilmour, an American who is on Westcoast's board of directors; and Edward T. Herndon, a partner in Eastman, Dillon.

Frank McMahon told investors that Westcoast's initial shipments of 400-million cu. ft. per day to Pacific Northwest may eventually be increased to 660-million cf/d—giving Westcoast at least $660-million in U.S. sales over a 20-year period.

Meanwhile, George McMahon, president of Pacific Petroleums, Ltd., says his firm is building an $18-million natural gas absorption plant, near Ft. St. John, B.C., as part of the program to supply "dry" gas to Westcoast. The new plant will remove sulfur, propane, and other liquids from the gas.

Below the border, Pacific Northwest strengthened its own part in the international gas-transmission project on two counts: The company contracted to supply about 1.2-million cf/d to the Wenatchee (Wash.) smelting plant of Aluminum Co. of America. And in Washington State Supreme Court, Pacific Northwest beat down an attempt by Issaquah (Wash.) landowners to block condemnation proceedings by which the company is lining up its route.

Horn-Tooting Tank

A new horn device, atop a 4.6-million-gal. fuel-storage tank at Atlantic Refining Co.'s Port Newark (N.J.) bulk plant, sounds off automatically if liquid rises above the "safe" mark. Audio engineers from Falcon Alarm Co., of Summit, N.J., are checking the installation with Arnold Palmer (right), superintendent of the Atlantic terminal. The horn, linked to a float within the tank, operates only if normal indicators or automatic pumping controls fail to halt rise of the liquid at the prescribed safety level.

What's New / IN TRANSPORTATION

The latest survey of world tanker tonnage points up a few factors that have contributed to present unseasonably-high tanker rates.

The half-yearly analysis of Davies & Newman, Ltd., London tanker brokers, lists 25 tankers converted to dry-cargo carriers in the last six months of 1955. The conversions totaled 319,000 dead-weight tons.

Also, 21 tankers, totalling 183,000 tons, were scrapped. Still another factor was a slow-down in shipbuilding, compared with the previous four years. Net tonnage gain at the end of the year was about 2.2-million, not counting government-owned tonnage in the U.S. fleet.

The Davies & Newman figures show the U.S. has slipped from second to third place in tonnage, with a total of 6.5-million. This is topped by the 8.1-million tons under the British flag, and 6.7-million under the Norwegian flag.

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The government's tentative refusal to back any new crude or products pipelines to the East Coast won't affect conversion of Texas Eastern Transmission Co.'s "Little Inch."

The Office of Defense Mobilization issued a memorandum last week—subject to challenge until May 10—in which it turned down loan-guarantee applications made by both Texas Eastern and American Pipe Line Corp. for competing products lines. Government help had been asked on the theory the lines could bolster national security in event of another war. ODM, however, ruled that existing facilities—taking into account a "recapture clause" by which the "Big Inch" could be returned to government crude service—are adequate.

Texas Eastern's plan to convert the "Little Inch" from gas to products service is again under fire before the Federal Power Commission (PW—Mar.16'56,p35).

But the plan was not geared entirely to the premise of government assistance. Texas Eastern says it will continue, when and if the FPC battle is won.

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Permian Basin Pipeline Co. plans to double the capacity of its compressor station now building in Andrews County, Tex.

The station already has been certified for a capacity of 25-million cu. ft. per day by the Federal Power Commission. Permian has filed a petition with FPC requesting approval of an increase to 50-million cu. ft. daily. The station will compress residue gas from a Phillips Petroleum Co. gasoline plant under construction in Andrews County.

THE SHORTAGE OF SCIENTISTS AND ENGINEERS:

How Critical Is It?

The United States is running into a serious shortage of scientists and engineers. There is no novelty in this observation. It has often been made in the last few years. And there has been mounting alarm about what this shortage may mean for both our national security and our prosperity.

There would be great novelty, however, if general agreement were attained on such important matters as the size of the shortage, the extent of the damage it threatens to inflict, and the best ways to eliminate it. The purpose of these editorials is not to provide this novelty, but to ventilate some of the key aspects of the shortage of scientists and engineers.

This first editorial in the series is designed to throw light on the over-all dimensions of the shortage. Others to follow will be addressed to such questions as:

- How serious is the threat to our economic well-being and to our national security?
- What needs to be done to prevent the shortage from becoming critical?

Rise Has Been Rapid

The problem is *not* that we have been producing a small number of engineers and scientists. Indeed, the number has risen sharply. We now have a working force of more than 600,000 engineers, over twice as many as the 286,000 there were in 1940. And we have about 250,000 scientists (chemists, physicists, biologists, geologists, mathematicians, etc.), compared to only 92,000 in 1940. About one in 148 persons in the labor force of 1940 was a scientist or engineer; today the ratio is about one in every 80.

In research and development work, where highly creative scientific minds are required, there has been fully as rapid a rise in employment of scientists and engineers. Fewer than 90,000 were employed in research and development fifteen years ago; the total now exceeds 200,000.

—But Not Rapid Enough

Despite this rapid increase in the number of scientists and engineers—at a rate much faster than the increase in the labor force as a whole—the needs of industry, government and education for technically trained people have risen even more sharply.

The principal reason for this mounting demand is the prodigious growth of research in the last 15 years. From a total of only about $900 million spent on all types of research in 1941, the annual expenditure rose to over $5 billion by 1953 (the latest estimate available). Over two-thirds of the research is done by private industry, mostly to develop new and better products and to find new and better methods of production. Most of the rest is performed by the government, largely to develop improved and inevitably more complex scientific weapons.

One aircraft company has found from its own experience that it required 17,000 engineering manhours to develop a typical fighter plane in 1940. The requirement is now about 1.4 million engineering manhours. Development of the typical fighter plane of 1960 will require well over 2 million engineering manhours.

In this dramatic example, the need for engineering services for a basic piece of military equipment soared 80 times in 15 years. It is an indication of why the demand for more and more technically trained men and women has outstripped even the imposing increase in scientific and engineering manpower of the last decade and a half.

Size of the Gap

Exactly how great the gap is between the available supply of scientists and engineers and the number required, it is impossible to say. In some instances technical talent undoubtedly could be better used than it is now. And part of the shortage might "disappear" if higher salaries had to be paid. (These questions will be discussed in later editorials.) But informed estimates of the approximate size of the gap can be given.

- According to the best available information, from estimates by the Engineers' Joint Council and the U. S. Bureau of Labor Statistics, **the minimum need for engineers from graduating classes is 40,000 each year for the next ten years.** Last year we graduated only 23,000 engineers, just about enough to cover replacement needs without allowing for any expansion of the number of active engineers. Projections made by the U. S. Office of Education indicate that we shall probably not have a class of 40,000—the *current* annual requirement —until 1963.
- According to Dr. Howard Meyerhoff, executive director of the Scientific Manpower Commission, **there is now a shortage of about 20,000 scientists.** Last year the number of doctoral degrees in the natural sciences, almost a prerequisite for research work, was only 5,000. Dr. Meyerhoff estimates that the shortage of scientists will rise another 30,000 by 1960.

More Needed As Teachers

Not all of the graduates with scientific and engineering training, furthermore, will work as scientists and engineers—that is, by performing research and giving it practical application. Such training is now necessary in many sales and management positions. And more of our technically trained men and women must remain in educational institutions as teachers if the quality of engineering and scientific education is to be maintained. A survey in 1954-55 by the National Education Association showed that, out of 277 universities, state colleges and large private colleges, nearly one-third *already* had unfilled vacancies in engineering and three-fourths had vacancies in physical sciences.

The dimensions of the shortage of scientists and engineers can be summarized as follows: **Despite a substantial rise in the trained manpower available, the needs of industry, the government and education have risen still faster. The best information indicates that, on the basis of current and anticipated needs, our recent yearly rates of production of slightly over 20,000 engineers and about 5,000 PhD's in natural sciences could be doubled without closing the gap entirely.**

The disturbing implications of this shortage for our national security and our prosperity and some practical suggestions for eliminating it will be the subjects of subsequent editorials in this series.

This is one of a series of editorials prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments of particular concern to the business and professional community served by our industrial and technical publications.

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Donald C. McGraw

PRESIDENT

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DEPT/Oil Men at Work

'Field Man' Heads AAPG

The new president of the American Assn. of Petroleum Geologists is Dr. Theodore Augustus Link, 59. He brings to the office a candor and direct approach born of his many years in the field as a petroleum geologist.

Link was installed as the 40th president of the 12,500-member organization at its annual convention last week in Chicago. He succeeds G. M. Knebel, manager of the exploration division at Standard Oil Co. (N.J.).

With the presidency, Link gets the job of appointing the many committees that function within AAPG. He also will travel widely through the U. S. and Canada, with the aim of calling at least once on all the affiliates of the organization. And though he considers his selection an honor, he regrets that it will take him away from the relaxed comfort of his home, which overlooks a parkland lake in suburban Toronto. He expects to be on the road several months during his one-year term.

Link views his new post with tongue-in-cheek frankness: "It's kind of like these aldermen in Toronto with their one-year term—they aren't in long enough to do any good, or to do any harm."

A few months ago, he returned home from a Florida vacation to learn he had won the presidential election and a new load of the paperwork he professes to dislike. He complains mildly: "When I got home, there were 30 parcels of mail waiting for me. And I wasn't even president yet."

Despite his professorial-sounding name, Link makes no bones about disliking the red tape and rigmarole of big companies. That's why he particularly savors the telephone call he got one day in 1942 from a director of Imperial Oil Ltd., his employer at the time.

"Can we produce a thousand barrels a day at Norman?" asked the executive. With equal directness, Link summed up the prospects in the field he had brought in nearly 20 years before. "Sure," he replied, "all we have to do is drill some more holes."

"Fine, that's all they want to know in Washington," answered the director. And with that was born another wartime project to supply oil for the armed forces. Link became the project's chief geologist.

In 1919, when Link was only 22 and but a year out of the University of Chicago, he led the party that brought in the discovery well at Norman, in the Canadian Northwest.

DR. THEODORE A. LINK, president of the American Assn. of Petroleum Geologists.

Link was aided by the high-water violence of the Mackenzie River, the only means of access to that area at that time. The river, swollen past flood stage by the spring runoffs, had spread a mass of uprooted trees across the flatlands. When Link and his party arrived at the three oil claims Imperial Oil had bought 55 mi. downstream from Ft. Norman, not even the ox they had with them could get through the mess.

So they packed their gear as far from the water as they could get it and Link said, "Drill here." He recalls that "there were shows of oil from the grassroots down." The discovery well was followed by 80 producers in that field.

Link is still amused by the naive seriousness with which he reacted when the first well blew in. "I yelled, 'Turn it off—don't waste any oil.' That was an awfully stupid thing to say."

He later pioneered in the use of aerial survey for oil exploration.

Flying was easier than the 19-hour trek he and his partner had to make after they ran out of food at the well-site. They made their way into Ft. Norman in time to see a steamboat pulling out for the area they had just left.

The remoteness of this area was emphasized again a short time later, when Link and a party prepared to land their plane on the Mackenzie. A motley group of Indians, traders, and settlers rushed to the river bank to see their first airplane. When the plane cracked up, the audience thought it was all part of the show. "We had a helluva time screaming at them to paddle out and bring us ashore," Link laughs.

Link began his geological career by working as a cook for the Geological Survey of Canada, in 1918. About a year later he joined Imperial Oil Ltd., where he worked his way up through the ranks. He left Imperial in 1948 to become a consulting geologist.

After receiving his bachelor of science degree in 1918, Link worked as an assistant geologist on the Canadian government survey of Quebec and British Columbia gold fields. He signed on as a cook because cooks were paid $90 a month, and geologists only $60.

He put in a brief stint with Empire Gas & Fuel Co. before joining Imperial as a geologist in 1919. From 1922 to 1926 he did field work in Colombia, South America, for Tropical Oil Co., an Imperial subsidiary. He returned to the University of Chicago for a year of study to get his Ph.D. degree in geology in 1927.

The following year was spent in Western Canada, again as a geologist with Imperial. He was named assistant chief geologist in 1944. While with the company, he helped map out the drilling programs that led to Leduc, Woodbend, Redwater, and Golden Spike.

Link resigned from Imperial in 1948 to become a consulting geologist, with offices in Calgary and Toronto. Early in 1954, A. J. Downing and D. Y. Cooke joined Link in the firm of Link, Downing & Cooke, Ltd.

The son of an American Lutheran pastor, Link was headed for the cloth himself. But he flunked Greek.

Link was born in La Porte, Ind., and was reared and educated in that midwest area. But with the exception of his four years in Colombia and the additional year in Chicago, Link has made his home in Canada ever since he graduated from college.

Link's brother, Walter K., also is a widely known geologist. Walter, a former chief geologist for Standard Oil Co. (N.J.), now is exploration chief for the Brazilian oil company, Petrobras (PW—Oct.14'55,p28).

Argentina Stakes New Oil Plan on

In the next ten days, U. S. and European oil-equipment manufacturers and pipeline builders will be deciding whether they want to do business with Argentina—on Argentina's terms.

They have until May 15 to submit formal bids in response to the government's recent call for international tenders on $250-million worth of oil development equipment and pipeline construction (PW—Mar.30'56,p36). The government is proceeding with plans for the projects as part of a new oil policy which, it hopes, will bring Argentina to a point of self-sufficiency in oil in five years.

The contracts look juicy—but the payoff is likely to be long-range. Exchange-short Argentina would like long credit terms, with half the contract price payable in 1959—from savings it expects to make by cutting down oil imports—and the other half payable in the 15 years following.

The government is staking its ability to pay off contracts on the conclusions reached by United Nations expert George R. Elliot in his report on Argentina's oil and gas resources (PW—Mar.9'56,p20). This report was released exclusively to PETROLEUM WEEK in Buenos Aires by industry minister Carlos Alsogaray. Although Elliot's conclusions have stirred considerable debate in Argentine circles, this is the first time the report has been made available in its complete text.

Elliot's report, "Petroleum Production in Argentina," was specially commissioned by the government, and executed by Elliot as a member of the United Nations' Technical Assistance Administration. Initially Elliot was asked to estimate the potential of oil and gas fields in the province of Salta, in northern Argentina. Subsequently he also visited other oil-producing areas — Mendoza and Neuquen in western Argentina, near the Chilean border, and Comodoro Rivadavia in the southeast.

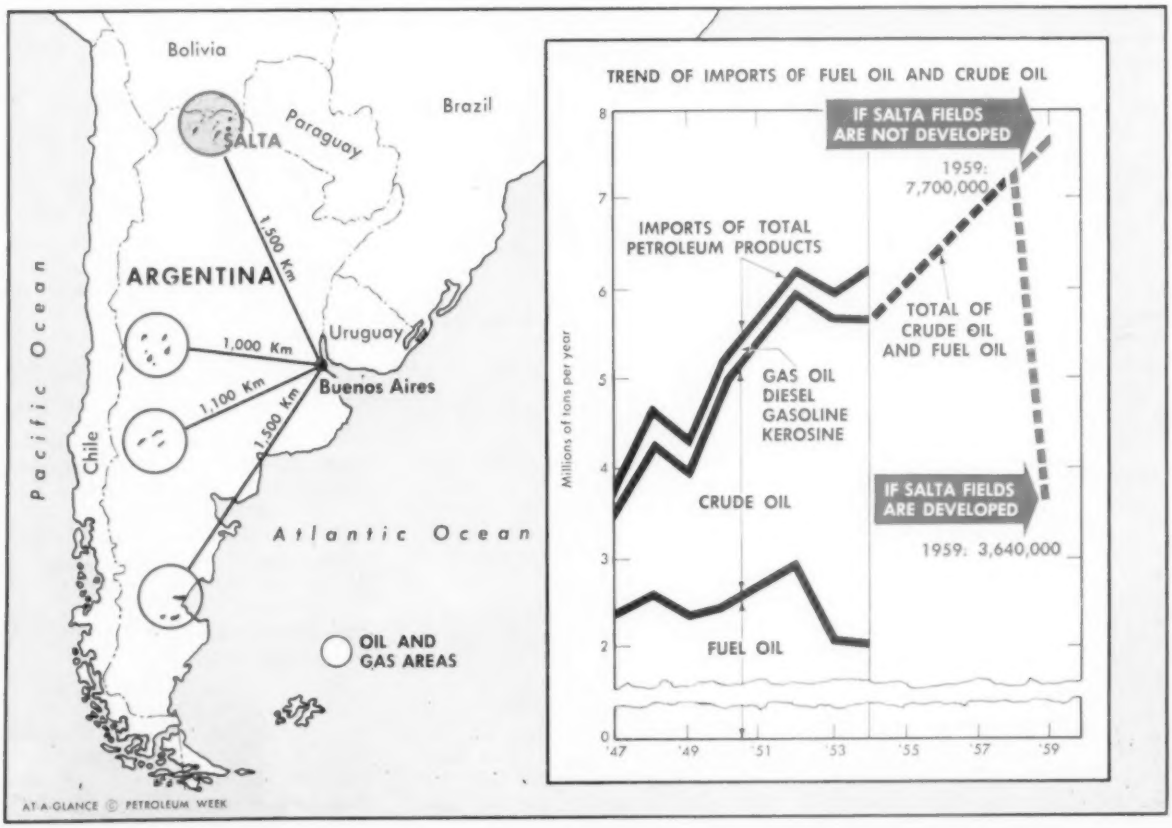
Argentina's resources of petroleum and natural gas are sufficient, if proper steps are taken, to eliminate entirely imports of crude oil and fuel oil beginning with the year 1959, Elliot says. This would mean eliminating virtually all imports except for some specialty products.

The growing importance of oil products to the economy is pointed up by the 175% increase in hydrocarbon consumption in the ten-year period 1945-54, Elliot says. Petroleum accounts for three-quarters of Argentina's power consumption. But "while consumption has increased, the discovery and development of new oil and gas reserves has not kept pace."

Present trends, Elliot points out, "show that crude oil demand is increasing by 500,000 tons annually. Argentine oil fields are supplying only 100,000 tons yearly of this increase."

Thus, in 1954, the report states, Argentina imported $149-million worth of oil products. Crude and fuel oil (5.7-million tons) accounted for 93% of the tonnage.

By 1959, Elliot estimates, Argentine imports of crude and fuel oil would normally rise to 7.7-million tons. These imports can be eliminated by



Self-Sufficiency by 1959 . . .

domestic supplies developed as follows (in tons per year):

- Condensate from the Salta gas-condensate fields: 1,320,000 tons.
- Gas from the Salta gas-condensate fields: 2,740,000 tons;
- Mendoza oil production increase: 1,300,000 tons;
- Increased transportation of gas from Comodoro Rivadavia, and Neuquen's Plaza Huincul field (in calorific equivalent): 170,000 tons;
- Increased production by water flooding at Comodoro Rivadavia: 500,000 tons;
- Increased production developed by operating additional drilling rigs: 1,670,000 tons.

Elliot estimates it would take a total investment of $190-million in the next three years to eliminate the $175-million worth of crude and fuel oil imports he figures would otherwise be necessary in 1959. Here is the way he breaks it down:

- Salta gas condensate field: Gas pipeline, $76-million; oil pipeline, $39-million; field installations, $13-million.
- Mendoza oil pipeline: $20-million.
- Comodoro Rivadavia water-flooding project: $10-million.
- Putting 41 additional rigs in operation (including reconditioning 9 of the present rigs, plus drilling costs and initial production expenses): $32-million.

The government added about $60-million worth of refinery and storage installation projects to Elliot's list in its recent call for $250-million tenders (PW—Mar.30'56,p36).

Elliot estimates 1959 imports can be virtually halved by production from the Salta fields alone. Campo Duran and Madrejones production, he says, could cut 1959 imports of 7.7-million tons to 3.6-million tons (chart, left).

The foreign exchange savings, he adds, would pay out the cost of the necessary pipelines and field installations in about two years. The pipeline would also handle nondollar crude from Bolivia, which is now bottlenecked by inadequate transportation facilities.

Possibilities of field extensions in the Salta area are so favorable, says Elliot, that the producing rate from this area alone could equal the volume of all crude and fuel oil imports —if drilling is sufficiently expanded.

Salta's oil and gas fields lie near the northern boundary of the province, in a basin extending northward into Bolivia for at least 310 mi. The area's commercial production started in 1926, rose to a peak of 341,000 cubic meters in 1942, and then declined to 88,000 cubic meters in 1954.

The productive limits of the Campo Duran field have not been defined, the Elliot report states. The field was discovered in 1951 some 12 mi. south of the Bolivia border. It now has nine completed productive wells, and a tenth is in process of completion.

For purposes of his report, Elliot outlined a "reasonable area" of 5,000 acres for the field. He calculates its gas reserves at 49.2-billion cubic meters. This includes liquid hydrocarbon reserves of 28.9-million cubic meters.

Some 70% of this area is already developed by the productive wells. "Geophysical surveys," says Elliot, "suggest the eventual extension of the field to include at least twice the outlined area."

The producing reservoir thus far penetrated, Elliot says, has a gross thickness of 130-160 meters, of which 110 meters is estimated to be net productive thickness. A deeper productive zone is indicated by three wells, but is not included in Elliot's calculations.

When the outlined area of Campo Duran is fully developed by 20 wells in 1958, Elliot estimates the field will have a calculated open flow capacity of 24.5-million cubic meters daily. As thus outlined, he says, the field can maintain a daily producing rate of 5-million cubic meters of dry gas for five years, or 4-million for a period of eight years.

The Madrejones field, north of Campo Duran and closer to the Bolivia border, has two completed wells, which, Elliot says, indicate potential capacity and productive thickness at least as high as those of Campo Duran.

When 20 wells have been completed at Campo Duran and 10 at Madrejones, Elliot estimates the combined producing rate will then be 7.5-million cubic meters of dry gas daily. Thus (using the calorific equivalent of 1,000 cu. meters of gas to one ton of fuel oil) he estimates the combined annual production from the two fields in 1959 would be equivalent to 2.7-million tons of fuel oil and 1.3-million tons of condensate.

. . But Plan Is Challenged

Several voices are being raised in Argentina to challenge the new oil policy the government is pursuing in line with recommendations of the Elliot report.

They are challenging not only the practicability of the aim to achieve self sufficiency by 1959—but also the very statistics on which it is based.

One of these challengers is Jose Ovidio Martinez, formerly with Yacimientos Petroliferos Fiscales, the government oil company. He is now employed by a firm representing a number of foreign oil-equipment firms.

While still a technical director of YPF, Martinez issued a report of his own.

Martinez estimates Argentine oil needs will be almost double the figure on which the government is proceeding. He says demand will reach 15-million tons annually by 1960.

It's possible to increase Argentine production to meet this, he adds.

The cost of achieving self sufficiency would be a whopping $1.1-billion for the 1956-60 period, according to Martinez' estimate.

The necessary expenditures would be (in millions of dollars) $120 for oil and gas pipelines from Salta; $40 for an oil pipeline from Mendoza; $18 for exploration; $80 for drilling, with 80 rigs and auxiliary equipment; $90 for extraction and storage at 1,800 wells; $40 for expansion and modernization of processing plants; $329 for maintenance of installations (calculated in line with previous experience at $7 per ton produced); and $394 to import some 19.7-million tons of oil that would be necessary before reaching self sufficiency.

It would be slightly less costly to continue as an oil-importing nation, Martinez says. Total cost for the next five years would be $984-million.

The figure includes $786-million for importing some 38.4-million tons of oil; and $198-million to maintain domestic production at its present rate. This means restricted production from the Salta fields, which Martinez says hold more than 60% of Argentina's proved reserves.

But a self-sufficiency program, Martinez says, could be completely amortized by 1961—if carried out.

Does Venezuelan oil face . . .

Big Hike in Labor Costs?

Venezuela's petroleum workers have drawn up a list of demands for higher wages and fringe benefits that could cost oil companies an estimated $108-million annually.

The proposals were formulated at a three-day national convention of union delegates representing 47,000 oil workers affiliated with the National Labor Confederation.

Formal negotiations with representatives of Venezuela's 14 operating companies will begin Aug. 12, a month before the present labor contracts expire.

The negotiations will be watched with considerable interest by potential newcomers to Venezuela who hope to get oil concessions.

The exaggerated demands would increase labor costs of oil operators by some 45%. But they're regarded as merely an opening gambit in new wage talks.

Included are pay hikes of up to $1.80 a day for wage earners, and a flat 20% increase for salaried employees.

Other items in the list of 90 proposals call for a bigger share of company earnings for workers under the terms of Venezuela's profit-sharing law; greater job security; secondary schools for workers' children; longer vacations with more pay; scholarships; and a home-ownership plan.

The convention opposed a move by oil companies to reduce crews of small boats operating in Lake Maracaibo from three to two, claiming this would throw 1,000 workers out of jobs.

Extension of benefits to cover employees of oil-industry contractors was also asked. Interestingly, this was one of the points discussed at the recent International Labor Organization's Petroleum Committee meeting in Geneva (PW—Apr.27'56,p28)—to which Venezuela did not send delegates.

Oil companies, already committed to a wide variety of civic and social responsibilites to workers, look more favorably on demands for wage increases than on additional — and costly—fringe benefits.

Plans to promote purchase of homes by workers are already being pushed by the companies themselves, who want to get out of the housing business. The programs have encountered some opposition among workers, who would have to take over the burden of home maintenance.

Demands will almost certainly be scaled down in negotiations, in which the government plays an important role. Labor ministry economists have undertaken an analysis of living costs as a basis for recommendations.

The official attitude was revealed recently. In an address to a gathering of 5,000 workers, President Marcos Perez Jimenez urged unions to pitch their wage demands to industry's ability to pay. On the other hand, the Minister of Labor has publicly stated he favors a bigger share of company profits for workers.

A peaceful settlement of the oil workers' demands is practically assured. Only three strike calls were issued in Venezuela last year. None of the disputes ended in a walkout. The labor ministry has power to shelve strike resolutions while holding negotiations open, and it exerts "moral pressure" on bargaining representatives to reach an agreement.

What's New / AROUND THE WORLD

Creps Drills New Well Near Libya Border

ALGERIA—The Shell affiliate that struck the first oil in the Sahara near the Libya border has spudded in a second well and plans to fly in a heavy rig to drill a third.

Cie. de Recherches et d'Exploitation de Petrole au Sahara (Creps) spudded in Edjele 102 on Mar. 25. The well is drilling below 836 ft. in clay and sandstone. Shell owns 35% of the company, which is controlled by the French government.

Creps has earmarked $3.6-million for further exploration at Edjele and has now built an airstrip nearby.

Further details were revealed last week in Paris on the discovery well that has stirred the rush for further oil concessions in Libya's bordering Fezzan province (PW—Mar.30'56, p36).

Edjele 101, Creps reports, first encountered important shows of oil and gas at 1,600 ft. in clay and sandstone. Drilling was continued, with more gas shows at 2,156 ft., and stopped at 2,913 ft. on Feb. 29.

Production tests were carried out on Mar. 22. The zone tested lies in the Upper Carboniferous (Vissen), in the interval 1,378-476 ft. The well yielded from 21 to 28 bbl. per hour through 12-mm. choke for 24 hours. The well was then capped, and the rig, a Failing 2500, was moved to start drilling on Edjele 102.

The crude was analyzed as 35-gravity, with 30% gasoline and no sulfur content.

Both political and geographical problems face Creps in exploring the Edjele area. The troubled political situation in Algeria has made it necessary to have a military guard around the discovery well.

In addition, there's no convenient water supply. Water for Edjele 101 was trucked 112 mi. from Hoanet, at a cost of $570 daily. Creps has now found a new water supply some 40 mi. from Edjele 102 and may build a pipeline to bring it to the well site.

•

Jersey to Buy Gulf Firm

DENMARK — Standard Oil Co. (N.J.) will take over oil exploration from Gulf Oil Corp. when current negotiations with the government are concluded.

Jersey Standard has already reached a conditional agreement with Gulf to buy the subsidiary that holds exploration rights over the entire country.

The current discussions, now nearing conclusion, concern technical modifications of the terms of the concession now held by Danish-American Prospecting Co. The company, whose exploration grant runs until 1960, recently resumed exploration after a two-year hiatus (PW—Apr.27'56, p29). Jersey reportedly will invest $5-million to continue the work.

•

Dissents on Oil Law

ITALY—A minority report on the controversial oil legislation that has now been reported out by a study committee will be submitted to Parliament by Deputy Ernest de Marzio. The rightist deputy is an advocate of private enterprise in developing Italy's

oil resources. He has been critical of the expansion of Ente Nazionale Idrocarburi activities outside of its Po Valley monopoly area (PW—Mar. 2'56,p29).

The nature of De Marzio's report has not been revealed, but it may further the prospect, increasingly talked about in Rome, that Parliamentary approval of the legislation may be indefinitely postponed with a view to redrafting it entirely.

•

Oil in Red Sea Isle?

SUDAN—There's oil in one of the islands off Sudan's Red Sea coast, according to Italian government oil experts. Press reports from Khartoum last week said the Italians advised Sudanese officials they had discovered oil on the island during World War II. The international situation at the time did not permit any wide-scale exploration, or commercial production of oil.

The reports from the Sudanese capital did not mention the name of the island. There are many of them all along the Sudan Red Sea coast, from Eritrea to Egypt. Eritrea was held by the Italians until 1941. From there they invaded southeastern Sudan early in World War II. It is believed it was then that they landed on Red Sea islands.

The director of the Sudanese geology department was reported as saying that preliminary geological studies of the structures along the country's Red Sea coast show great similarities to oil-producing regions of Arabia along the Persian Gulf.

•

New Fields to Open Up

VENEZUELA—A joint pipeline outlet to the Caribbean was set this week for the shut-in production of Socony and Sinclair fields in Barinas, western Venezuela.

The companies announced that Socony Mobil Oil Co. de Venezuela and Sinclair Oil & Refining Co. will start soon on joint construction of a 20-in crude line from the Silvestre field to Puerto Cabello, 211 mi. away. Initial capacity will be 100,000 b/d.

Plans for the line were approved last week by the Ministry of Mines & Hydrocarbons. The Socony subsidiary will be the operator.

Completion of the line will open up an undetermined amount of production from both companies' fields at and near Silvestre. Thus far, neither company has been able to evaluate fully the productive potential of the new fields, due to lack of an outlet. Socony at present has eight or nine productive wells shut in, and Sinclair has ten.

•

GUATEMALA—Official announcement on the eligibility of the 29 companies that have submitted oil concession bids is expected around May 10 (PW—Apr.13'56,p27).

Oil company representatives will then have about 15 days to work out trading or joint-operation agreements on the conflicting claims among the 91 bids submitted. Overlaps not resolved within that time will then be put up for competitive bidding.

•

BRAZIL—A Brazilian opinion institute claims the public is far less opposed to foreign capital for oil development than is generally believed.

A public opinion survey published in a Brazilian newspaper last weekend said a majority of the public favors foreign capital for the country's development, including its oil resources.

Although economists and key figures in the government believe such participation essential (PW—Apr. 13'56, p20), the reported findings are the first sign that the vehemently nationalistic oil policies voiced over the past few years do not represent the feeling of a major segment of the public.

•

UNITED KINGDOM—Mission Mfg. Co., of Houston, is planning to set up a new plant in Northern Ireland to produce oil equipment for export.

The plant will be built at Castlereagh, near Belfast. Virtually all its output, including drilling tools, slush-pump parts, plug valves, and centrifugal pumps, will be exported to South America, India, Pakistan, and Middle East countries.

•

IRAQ—The government plans to invite international tenders for a progressive increase in the capacity of its Daura refinery.

The project calls for raising the plant's capacity to 30,000 b/d by early 1957, and to 40,000 b/d by 1960.

The $30-million refinery, built by M. W. Kellogg, went on stream last summer with a rated capacity of 24,000 b/d and has been operating at close to 27,000 b/d.

The U. S. Dept. of Commerce, in Washington, has a report on the expansion plan available for loan.

Brazil Refinery Set for Major Expansion

Brazil's small Mataripe refinery will be expanded to 37,000 b/d capacity by M. W. Kellogg. The company last week announced it has been awarded a contract by Petrobras under which the 5,000 b/d plant's thermal cracking units will be converted and expanded and new units added for production of gasoline, diesel oil, and LPG, as well as a 3,000 b/d lube plant and a 60-ton-daily wax plant. Kellogg will engineer and design the processing plant, and coordinate requisitioning. It has arranged for dollar-short Brazil to procure materials and equipment in soft-currency areas—some of it from a French consortium under long-term financing.

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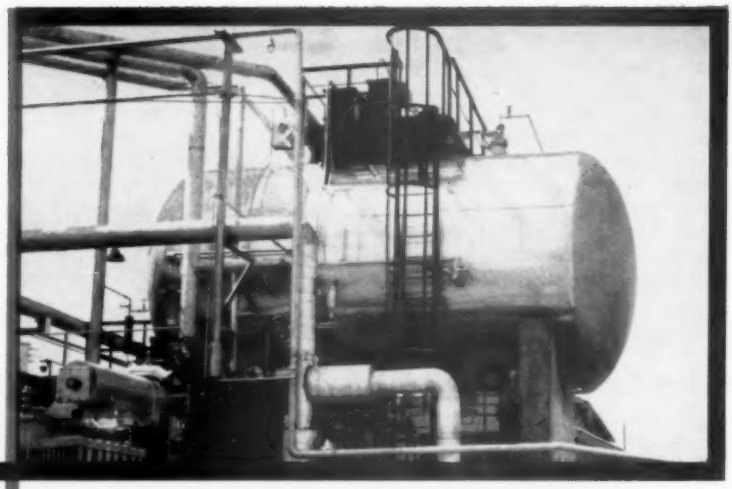

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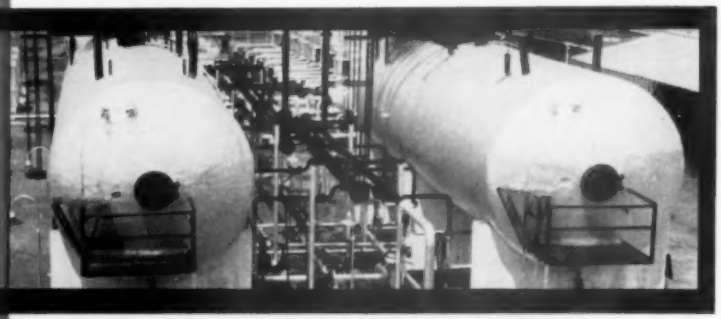

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Is the Turbocar Really Coming?

● Problems of the auto gas turbine are being licked, a college engineering professor says.

● But a GM engineer believes coming changes in piston engines—now in the works—are a better bet.

A professor and an engineer took another look last week at the automotive gas turbine. The professor predicted that by 1965 gas turbines will power 10% of new cars and trucks produced. The engineer contended that piston engines "will be around a long time."

The professor made his prediction in a talk entitled "Jet Engines and Their Probable Future." He discussed use of gas turbines in aircraft, locomotives, and ships. But most attention was given to use of gas turbines for road vehicles.

The engineer took a frankly dim view of the gas turbine as a power plant for automobiles, in a talk on "What's Happening to Automotive Engines." He said it would take at least ten years to develop a turbine engine, tool up, and go into production—if all went well. But he indicated that he didn't think this was likely to happen.

The professor—William P. Barnes of the University of Utah—made his prediction to the Refining Committee of the Rocky Mountain Oil & Gas Assn. He gave the pros and cons of gas turbines for automotive use, but left no doubt he expected turbocars to be a familiar item a decade from now.

Barnes, who is Associate Professor of Mechanical Engineering at Utah, said one of the turbine's most promising applications appears to be as a power plant for locomotives. Such a power unit would be able to operate on bunker "C" fuel, or even powdered coal. Use of the gas turbine for naval vessels will be limited, he added, to power outputs of 20,000 hp. or less.

In talking about the future role of gas turbines for automobiles, Barnes made it clear that a host of problems remain to be solved before mass production of turbocars can be made practicable. But he predicted that most of these problems will be solved, or minimized, within ten years.

The engineer—D. F. Caris of General Motors—spoke at the Southern California Section of the Society of Automotive Engineers. He freely admitted that he's "a piston-engine man."

As head of the automotive engines department of the research laboratory division, it's Caris' job "to develop piston engines that will keep ahead of these experimental engines (turbine and free-piston) you've been hearing about."

Caris said the shortage of nickel would be an important limitation on widespread use of gas turbines. He explained that the high temperatures developed in operation require turbine blades to be made of nickel alloys.

The GM engineer also stated that the free-piston engine is not nearly so far along as the turbine. But both engines, he claimed, have a common serious deficiency in automobile operation—they are inefficient at light load speeds.

Caris summed up his feelings about the new engines this way: "We've made lots of engines—rotary-valve, slide valve, radial, all sorts. We built them and ran tests on them and when the tests were over we threw a cover over them and put them in the morgue. They're still there. Now, when we finish testing an experimental engine, we don't put it in the morgue; we put it in a fancy automobile and get some publicity."

Barnes gave a word picture of "tomorrow's 200-hp. passenger car turbine engine." He said it probably will have a fuel mileage of 20 mpg. at 20 mph., 16 mpg. at 40 mph., and 14 mpg. at 60 mph.—this on fuels of medium volatility and low octane number, possibly methanol, propane, or butane.

In discussing fuels, Barnes said the "most suitable" appear to be those which give cleanest burning in a lamp using a wick. He said the aircraft turbine "has shown quite a dislike" of aromatics boiling at over 400F. Overlooking cost and specific fuel consumption, he went on, methanol is probably the most ideal liquid fuel for a gas turbine.

The Utah professor added that natural gas (methane) is a desirable fuel from a volatility standpoint. But from a more practical viewpoint, he said, the automotive gas turbine probably will use low-octane motor gasoline, or JP4.

There will be other technical improvements in tomorrow's gas turbine, Barnes continued. These will include improvements in the efficiencies of compressors, turbines, and regenerators. Barnes revealed that a regenerative gas turbine of 75% efficiency gives better specific fuel consumption than a piston engine with an 8:1 compression ratio. He believes the efficiency rate will be about 80% in tomorrow's gas turbine engine.

But, Barnes admitted, the cost factor must be licked before mass production of turbocars becomes a reality. Other problems that will need more attention: high fuel consumption at low speeds, relatively poor acceleration, and suitable alloys for turbine blades.

Barnes said that "no one at this time" believes the regenerative gas turbine can be produced at less cost than the piston engine. But Barnes believes mass production techniques will resolve the problem. Acceleration is slow because the first turbine must "wind up" before the full power of its gases begin spinning the second turbine.

Caris stressed the work being done to improve piston engines, particularly changes in combustion chambers to reduce octane requirements.

The GM engineer discussed performance of one combustion-chamber design (a "pot" shape with recessed piston) that developed, on 70-octane fuel, power equivalent to that which an engine having a pancake combustion chamber developed on 93-octane. Caris revealed that GM has conducted tests on some 200 different combustion chambers in an effort to build "mechanical octanes" into engines.

But for the immediate future, Caris went on, octane requirements will continue to climb as compression goes higher. He said higher compression can give greater economy, and that he is satisfied that auto makers will have no trouble building an engine with a 12:1 compression ratio if the fuel to run it becomes available.

He said the trend toward higher horsepower also would continue. But he said he expected horsepower to drop when auto owners "finally become aware that the additional horsepower is coming out of their gas tanks."

PORT ARTHUR REFINERY of Gulf Oil is in for a lot of new construction as . . .

Gulf Builds for More Octane

Gulf Oil Corp. is starting a modernization program at its Port Arthur (Tex.) refinery. It will be designed primarily to produce more high-octane blending components for gasoline from light ends.

The company announced this week that it is expanding both its polymerization and alkylation facilities.

The catalytic polymerization plant, which converts propylene into a higher-octane component, will be expanded from 2,300 b/d to about 5,000 b/d. Procon, Inc., has been contracted for this job, which involves installing six new reactors.

The No. 1 alkylation unit will be expanded from 1,200 b/d to more than 4,000 b/d. This will make possible a greater conversion of isobutane and butylenes into blending components for avgas and motor gasoline.

The alkylation unit will use a new reactor, to be installed by M. W. Kellogg Co. This unit also is planned for completion in early 1957.

To provide additional sulfuric acid for its sulfuric alkylation capacity, Gulf will double the capacity of its existing sulfur recovery facilities to about 120 long tons a day. The additional capacity is required to handle hydrogen sulfide from the newly completed fluid cat cracker and the two new 25,000 b/d Gulfiners.

Sulfur from the recovery unit is converted into sulfuric acid. When the new unit goes on stream early in 1957 it is expected to eliminate the need for purchased sulfuric acid at the refinery.

Included in the modernization program will be new facilities for blending, compounding, and packaging lube oils, greases, and specialty products.

The new plant will have three filling lines for drums and eight lines for filling other containers.

Europe Has New Petrochemical Boom

Europe and the United Kingdom appear to be headed for a new era in petrochemical expansion now that coal price ceilings have been dropped.

No major price increases for coal are expected following the removal of price ceilings by the European Coal & Steel Community. But any increase in already expensive coal will provide an incentive for a greater use of petroleum-derived chemicals.

The biggest portion of the new petrochemical expansion will be in the five nations that already have substantial petrochemical capacity. The existing capacity in those nations—Great Britain, West Germany, France, the Netherlands, and Italy—was developed to utilize the raw materials available as a result of the five-fold expansion in refining capacity since the war.

Belgium's first petrochemical facility, an ethylene oxide and glycol plant, using ethylene from Antwerp refineries, is scheduled to go on stream this year.

Some U. S. oil companies will be directly involved in the expansion with new plants of their own, new outlets for refinery gases, and use of U. S.-developed processes and production knowhow.

Esso Petroleum Co.'s first petrochemical plant in Great Britain, a $25.2-million facility at its Fawley refinery, is expected to touch off expansion programs by other chemical processors to use the additional raw materials produced by Esso.

A big portion of the Esso petrochemical output will be used in Great Britain's first synthetic rubber plant. Also, Monsanto Chemical is considering building a polyethylene plant that would provide an outlet for Esso's ethylene.

Other petrochemical expansion in Great Britain, according to McGraw-Hill's Chemical Week, includes a boost in ethylene production from 40,000 tons a year to 60,000 tons a year by Imperial Chemical Industries. ICI's Billingham ammonia plant, now using coke-derived water gas, is being converted to crude oil, using the Texaco partial-oxidation process.

Shell Chemical is building a 20,000-ton-a-year alkyl benzene plant near its Shellhaven refinery. Also a 70,000-ton-a-year ammonia plant will be completed at Shellhaven in 1958.

In West Germany, Farbwerke Hoechst is planning a 20,000-ton-annually polyethylene plant at Hoechst. Kohle-Oel Chemie plans a similar plant at Gelsenkirchen. One ethylene plant, using topped crude residue, is under study.

Several polyethylene plants are being planned for France, including one by the government-owned oil company. And ten oil, chemical, and rubber companies have joined to build a butyl rubber plant.

Bataafsche Petroleum Mij. (Shell) is switching its vinyl chloride plant in the Netherlands from coke-oven gas to refinery ethylene. BPM also is building a butyl alcohol plant and a methyl-ethyl-ketone unit at Pernis this year. A glycerine plant will be finished at Pernis in 1957.

In Italy, Montecatini is planning a second ammonia plant to use either gas or oil as raw material. The company also is building an acetylene unit.

Rubber: More Man-Made 'Natural'

Continued development of synthetic rubbers from hydrocarbons gives indication that the tree-grown variety may soon be forced out of its markets.

Synthetic rubber use in the U. S. already accounts for about 60% of the total new rubber consumed. This usage is based primarily on the war-developed GR-S and butyl rubbers. But with new synthetics in the offing, use of man-made rubber is expected to move up sharply.

The newest entries in the field are "several new synthetic rubber-like" materials developed by Phillips Petroleum Co. Some have the characteristics of natural rubber. Here are the details, as made public this week.

• One of Phillips' new synthetics is made from butadiene, the basic raw material for GR-S. It promises to be an economical alternate for natural rubber and "may excel natural rubber in some of its uses," according to Phillips.

Phillips describes the new material as a cis 1,4-polybutadiene. A process has been developed that will produce this polymer with high yields.

The heat build-up of the material is said to be 20F below that of standard GR-S cold rubber, approaching natural rubber in this respect. The resilience is said be 10% to 15% better than GR-S. The freeze-point is about —160F, some 70F below that for GR-S, indicating better low-temperature performance.

• A modification of the process for making the butadiene-based synthetic alternate for natural rubber produces a high-softening-point resin. This product has many potential applications in the plastics and rubber fields, according to the company.

The modification produces a *trans* 1,4-polybutadiene with a softening point greater than 300F.

Phillips reports that this new butadiene material can be easily compounded by standard techniques. Styrene, a component of conventional synthetic rubbers, is not used in the new butadiene-based rubber.

• Phillips also is producing a synthetic rubber in the laboratory which has the structure and properties of natural rubber. This was achieved by the synthesis of cis 1,4-polyisoprene.

The company does not say whether or not a commercial process for producing this material has been perfected.

• Another rubber development by Phillips is a synthetic counterpart of natural gutta percha or balata, used in products where toughness is important.

The synthetic gutta percha can be made at lower cost than that derived from natural rubber, claims Phillips.

This product was made by the synthesis of *trans* 1,4-polyisoprene.

With its new rubbers, Phillips becomes the third company to develop a synthetic rubber with the structure and properties of natural rubber.

Previously Firestone Tire & Rubber Co. and Goodrich-Gulf Chemicals Co. have announced natural-type synthetic rubbers.

What's New
IN REFINING

Sunray Mid-Continent Oil Co. is starting an $8-million to $10-million refinery improvement and expansion program at its two processing plants.

At Tulsa, the company's affiliate, D-X Sunray Oil Co., will build a 12,000 b/d cat reformer, a 12,000 b/d hydrogenation unit, a 2,500 b/d alkylation plant, and a 1,500 b/d butane isomerization unit.

At D-X Sunray's Duncan (Okla.) refinery, cat reforming capacity will be increased from 5,000 b/d to 8,000 b/d. An 8,000 b/d pretreater will be built to provide additional charge stock for the cat cracker. Also a 10,800 b/d hydrogenation unit will be added.

•

Kerr-McGee Oil Industries, Inc., is buying the 20,000 b/d refinery at Cushing, Okla., from General American Oil Co. Kerr-McGee has been operating the plant throughout the past year.

Dean A. McGee, president, said the agreed purchase price is $3.5-million. The purchase is expected to be consummated by May 25.

Kerr-McGee has contracted with C. F. Braun & Co. to analyze the current units in order to decide what additions should be made to increase the octane rating of gasoline produced in the plant.

•

The first step in the modernization and expansion of Wilshire Oil Co.'s Norwalk (Calif.) refinery was started last week with plans for a 10,000 b/d Platformer-Unifiner.

Southwestern Engineering Co. has been awarded the contract to construct the UOP-licensed unit.

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Group Insurance for Jobbers, Dealers

A new group insurance plan set up by Standard Oil Co. of Indiana is providing the company with a new way to upgrade its independent dealers and jobbers. And other major oil companies are starting to take a look at the possibility of setting up similar plans.

Late last summer (PW—Sep.2'55, p21) Indiana completed negotiations for the plan with the Metropolitan Life Insurance Co. It is believed to be the first group insurance plan offered to nonemployee outlets by a U.S. oil company. It is open to the company's 13,200 dealers and to its handful of jobbers.

The plan offers independent dealers, jobbers and their assistants coverage for hospital expenses and special services, surgical operations, maternity benefits, and physicians' attendance in the hospital, plus life insurance.

Group insurance for an oil company's nonemployee outlets was considered impractical for a long time. Critics pointed out that dealers and jobbers were spread out over too wide an area for such a plan to be "sold," and then administered, properly. But Indiana Standard felt that the dealers and jobbers, regardless of how scattered they were, had a common denominator of interest—the company's brand, which is tied together by the sales department.

Indiana Standard feels that group insurance is an effective way to get, and keep, good distributors and service station dealers. The company is hoping that the plan will help solve the turnover problem. High dealer and jobber turnover usually means lost outlets and decreased gallonage to a supplier. That's the main reason why oil companies are trying to keep dealers and jobbers happy.

The cost of training new dealers and jobbers is also a problem. If group-insurance coverage makes dealers and jobbers more satisfied with their supplier relations, company training costs could be cut appreciably.

Other oil companies interested in upgrading dealers and jobbers may follow along soon.

Most oil companies are actively seeking new ways to better the lot of their independent "agents" — dealers and jobbers. The frequent government investigations into oil company marketing practices, companies feel, usually result from unhappy retailers.

But companies say that an even more important reason for helping station operators and jobbers is that it is simply good business. Efficient outlets, run by contented independent businessmen, they contend, mean more volume and more profits for all concerned.

Oil companies interested in setting up group insurance plans similar to Indiana's will find insurance firms waiting with open arms. One insurance official told PETROLEUM WEEK last week that his company is anxious to participate in such plans. "The one area of American business in which group insurance has not been established," he says, "is the retail segment. We're encouraging plans like Indiana Standard's among other oil companies, as well as in other industries. In a sense, it's a last frontier—and a mighty big one."

The Indiana-Met Life plan could be copied by any size oil company.

But there are still some serious obstacles to widespread acceptance of such insurance plans by oil companies.

Some companies anticipate being charged with "attempting to control independent outlets" if they offer the plan. With antitrust and unfair-trade-practice charges in the air, some large companies are inclined to go slow in adopting any radically new policy toward dealers and jobbers.

Another factor in holding back the spread of supplier-sponsored group insurance for nonemployee outlets, is this: Several dealer and jobber associations offer similar plans. Indiana's policy, for instance, met with indifference in areas where trade associations had already established group-insurance plans.

Still another hurdle is the cost of such plans. Insurance agents say that if dealer-jobber group insurance is really to catch on, the supplier companies must at least share in the premium payments. (Indiana is simply administering its program; it is not sharing in the cost.)

Under Indiana Standard's plan, participants pay "their own way." Some dealers pay the entire cost of

Standard Oil Co. of Indiana is the first U.S. oil company to sponsor a large-scale health and life insurance plan for nonemployee outlets. Available without medical examination, the plan is paid for by the dealers and jobbers themselves.

Coverage Includes:

	UP TO
Hospital Expense Insurance	
$8 Daily Benefits for as long as 70 days	$ 560
Hospital Special Services	
Up to $100 plus 75% of other charges up to $1,900, or a total of	$1,525
Surgical Operation Insurance	
A cash benefit to help pay the surgeon's fee	$ 200
Maternity Benefits *for dependent wives (normal delivery)*	
Hospital Expense	$ 80
Surgical Operation	$ 50
even higher benefits for certain complications	
Physicians Attendance Insurance	
$3 times the number of days of hospitalization	$ 175
Life Insurance	
Dealers and Jobbers	$4,000
Assistants	$1,000

the insurance for their assistants. Others share the cost with their assistants. Actual cost depends on the number and ages of the participants. The latest monthly rates are:

Under 65 Years Old:	
Dealer, Jobber	$5.75
Dealer, Jobber & dependents	$10.75
Assistant	$2.75
Assistant & dependents	$7.75
65 and Over:	
Dealer, Jobber	$3.95
Dealer, Jobber & dependents	$8.95
Assistant	$2.40
Assistant & dependents	$7.40

(Monthly payments are less for those 65 and over because they receive less life insurance coverage.)

The company says that it has about 5,000 participants so far. And it estimates that the plan is gaining ground at "about 10% to 15% per month." Indiana officials are quite optimistic about the plan. Although it got off to a slow start, Indiana says that the overall dealer-jobber reaction has been "excellent." It estimates that about half of those for whom the plan was designed have already "come into the fold." And it says that this response proves that dealers and jobbers appreciate what the company is trying to do.

Dealer and jobber associations won't make official comment on the Indiana plan. But they do say that group insurance in general is an effective way to make the position of dealers and jobbers more attractive. Neither the National Oil Jobbers Council nor the National Congress of Petroleum Retailers is willing to pass judgment on the Indiana plan now. Both are taking a "wait-and-see" approach. But NCPR sponsors a group-insurance plan for its member dealers and has encouraged dealers to "protect themselves" by signing up for it. It feels that group insurance is one of the benefits which can make operating a service station a more attractive business. But whether it will approve of supplier sponsorship of such plans remains to be seen.

What's New / IN MARKETING

Tax Refunds Asked For Evaporation Losses

Retail gasoline dealers may get federal tax refunds on gasoline lost through spillage and evaporation—an estimated 2% of total volume. A bill to this effect was introduced in the Senate last week by Sen. Norris Cotton (R.,N.H.). Cotton says that "dealers pay the federal tax on the gasoline that is lost despite the fact that the tax is designed as a highway-use levy. The impending increase in the tax . . . makes it urgent that Congress act to prevent dealers from being further penalized."

The measure has the backing of the National Congress of Petroleum Retailers as well as several New Hampshire dealer groups

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Lube Insurance Offered

"Engin.surance," Deep Rock Oil Co.'s new promotion, which backs up the company's top-grade motor oil with a $1-million performance bond, is being offered this week at the company's midwestern service stations. Motorists can get warranties on their lubrication operation for as long as they use Deep Rock all-season oil. They are protected for the full amount of engine damage resulting from product defects. Trucks and tractors also qualify for the plan.

Deep Rock's president, Frank C. Love, says the reason for the move is that "today's consumer buys motor oil 'blind.' He can't see it in use; he seldom even touches the container." So Deep Rock, he says, is offering the lube insurance "in fairness to the consumer and to the service station handling lubricating oils."

•

The Pennsylvania Grade Crude Oil Assn. is making a new effort to "protect the integrity of the name Pennsylvania on motor oils in foreign markets." The association has appointed a four-man advisory panel to suggest advertising and promotional programs to better acquaint foreign consumers with its products. The action is said to be a result of recent reports from several European countries which told of foreign petroleum products being sold under the "Pennsylvania" label.

•

Michigan gasoline dealers have won their fight for passage of an anti-trade-diversion bill. Last week Gov. G. Mennen Williams signed a bill that is designed to prohibit firms from acquiring items simply for resale to their employees.

Dealers, through the Retail Gasoline Dealers Assn. of Michigan, had been actively supporting the bill since its introduction in the state senate several months ago. The dealers contended that companies outside the oil industry had been buying up large amounts of antifreeze, filter elements, spark plugs, and other TBA items for resale to their employees.

•

Utah Oil Refining Co.'s $1.7-million marketing expansion will include 30 new service stations in the company's northwest marketing area. Almost 20 of the stations are already under construction. Utoco will spread the new stations through Utah, Idaho, Oregon, and Washington. The company now markets through 685 stations, which are supplied by a 30,000 b/d refinery at Salt Lake City. Last year the refinery processed 10.3-million bbl. of Rocky Mountain crude.

•

Tide Water Associated Oil Co. has bought out one of its largest independent distributors, Holt Oil Co., Federalsburg, Md. For some time, Holt has been distributing Tide Water products through over 200 retail outlets, and to many commercial and farm accounts in Delaware, eastern Maryland, and parts of Pennsylvania. It has also served some 3,000 home fuel-oil accounts there. Tide Water will now begin direct distribution in these areas.

•

Gasoline octane ratings have risen to 96 for premium and 89 for regular, according to the April quarterly survey by Du Pont. The April ratings are up 0.1 for premium and 0.2 for regular over January figures.

•

Delhi-Taylor Oil Corp. will expand into eastern seaboard and southeastern U.S. markets on a bulk basis. Products will not be sold in these areas under the Delhi-Taylor flag, however.

The company is opening a New York office within a few weeks to direct marketing in the new areas. It will be "two or three months," however, before the company is "ready to go" in the Southeast.

The company's move for new markets is part of a new three-year $30-million expansion program.

The Market Place AROUND THE WORLD

Prices compiled for PETROLEUM WEEK by Platt's OILGRAM Price Service and National Petroleum News, McGraw-Hill Publications

All Prices as of April 30

Bold face type indicates changes from previous week

KEY PRICES—REFINED PRODUCTS

(¢ per gal. except dollars per bbl. where $ is shown)

Western Hemisphere

U. S. Gulf Coast, cargoes
- **Gasoline, 98 oct prem** ..... **13.25†-13.75†**
- **Gasoline, 92 oct reg** ..... **11.5†-12†**
- Kerosine 9.5-9.75
- Heating oil, No. 2 ..... 8.75-9.5
- Gas oil, 48-52 d.i. 9.125-9.375
- Fuel oil, bunker "C" $2.10-2.15

Caribbean, cargoes
- Avgas, Grade 100/130 ..... 16.75
- Gasoline, 93 oct research prem 11.75
- Gasoline, 87 oct research reg 10.5
- Gasoline, 79 oct research 9.75
- Gasoline, 70-72 oct motor method 9.5
- Kerosine 9.5
- Heating oil, No. 2 ..... 8.75
- Gas oil, 48-52 d.i. 9.125
- Fuel oil, bunker "C" $2.10

New York Harbor, barges
- Kerosine 10.85
- Heating oil, No. 2 ..... 10.35
- Fuel oil, No. 6 ..... $2.65

Okla.-Group 3, northern shpt, bulk
- Gasoline, 86 oct reg 11.25-11.5
- Kerosine 10-10.25
- Heating oil, No. 2 ..... 9-9.5
- Fuel oil, No. 6 ..... $2.00-2.20

Chicago, bulk
- Gasoline, 86 oct reg 12.25
- Heating oil, No. 2 ..... 10.1-11.1
- Fuel oil, No. 6, high sulfur 7.7-8.5

Los Angeles, rack
- **Gasoline, 84 oct reg** ..... **11.9↓-13.15**
- Diesel fuel, PS 200 ..... 9.3-9.8
- Light fuel, PS 300 ..... $2.65
- Heavy fuel, PS 400 ..... $2.15

Natural Gasoline, Grade 26-70
- FOB Group 3 ..... 4.5
- FOB Breckenridge, Tex 4

LP-Gas—Propane
- Oklahoma (Group 3) 4.5

Penna Lubes
- Bright stock, 25 p.t. 24
- 200 vis. neutral, 25 p.t. 21

Mid-Continent Lubes, Tulsa basis
- Bright stock, solvent 95 v.i. 24-25
- Neutral, solvent 200-210 vis. 19.75-20.75

Gulf Coast Lubes
- Bright stock, solvent, 95 v.i. 25
- Neutral, solvent, 200 vis. 21.5

Eastern Hemisphere

Singapore, cargoes
- Avgas, Grade 100/300 ..... 18.375
- Gasoline, 79 oct research 10.5
- Gasoline, 70-72 oct motor method 10.25
- Kerosine 10.125
- Gas oil, 48 d.i. minimum 9.75
- Fuel oil, light $3.30

KEY PRICES—CRUDE OIL

(2¢ differential per deg. of grav. applies except as noted)

Western Hemisphere

United States (at the well)
- Mid-Continent, 36.0-36.9 ..... $2.82
- North Dakota, 36.0-36.9 ..... 2.82
- Texas:
  - Gulf Coast, low cold test, 26.0-26.9 ..... 2.95
  - Gulf Coast, upper and lower, 26.0-26.9 ..... 2.82
  - West Texas sweet, 36.0-36.9 ..... 2.82
  - West Texas-New Mexico intermediate, 36.0-36.9 ..... 2.75
  - West Texas-New Mexico sour, 32.0-32.9 ..... 2.61
  - East Texas, flat price 2.90
  - Mirando, 28.0-28.9 ..... 2.96
- Illinois Basin, flat price 3.00
- Penna Grade, Bradford dist, flat price 4.20
- California, Signal Hill, 21.0-21.9 ..... 2.41†
- North Louisiana-Arkansas, 36.0-36.9 ..... 2.82
- Wyoming sweet, 36.0-36.9 ..... 2.82
- Wyoming sour, 32.0-32.9 ..... 2.48

Canada (flat prices, at the well)
- Acheson-Stony Plain (Alta.) D-2, D-3, L. C. 2.54
- Leduc-Woodbend (Alta.) D-2, D-3 ..... 2.60
- Redwater (Alta.) D-3 ..... 2.49
- Daily-Mississippian (Man.) 2.34
- Smiley-Viking (Sask.) 2.26

Venezuela (Cargoes, FOB lifting port designated)
- Cumarebo, 48.0-48.9, Tucupido 3.40
- San Joaquin, 41.0-41.9, Puerto la Cruz 3.04
- Oficina, 35.0-35.9, Puerto la Cruz 2.80
- Tia Juana Medium, 26.5-26.9, Amuay 2.30*
- Bachaquero, 16.5-16.9, Amuay, Las Piedras 1.90**
- West Tarra, 40.0-40.9, Cardon 3.05
- Lagunillas Heavy, Amuay, Cardon, Las Piedras, flat price 2.05

Differential per ½ deg. grav.: (*) 2.5¢ bbl. (**) 3.5¢ bbl.
†Differential per deg. of grav. varies.

Eastern Hemisphere

Middle East, Persian Gulf (Cargoes, FOB lifting port)
- Arabian, 36.0-36.9, Ras Tanura 1.97
- Basrah, 32.0-32.9, Fao 1.79
- Iranian, 34.0-34.9, Bandar Mashur 1.91
- Iranian, 34.0-34.9, Abadan 1.86
- Iraq, 36.0-36.9, Fao 1.87
- Kuwait, 31.0-31.9, Mian-al-Ahmadi 1.72
- Qatar, 39.0-39.9, Umm Said 2.05

Middle East, Eastern Mediterranean
- Arabian, 36.0-36.9, Sidon 2.46
- Iraq, 36.0-36.9, Tripoli, Banias 2.46

Far East, (Cargoes, FOB Lutong, Sarawak)
- Seria Light, 37-38 ..... 2.60

KEY TANKER RATES

(Last paid, per long ton, single voyage)

- U.S. Gulf-New York, clean ..... (USMC+30%) $3.71**
- U.S. Gulf-New York, dirty ..... (USMC+10%) $3.14**
- **NWI-USNH, dirty ..... (USMC+100%) $5.40†**
- NWI-UK/Continent, dirty ..... (Scale+45%) 47/1*
- **Persian Gulf-UK/Cont., dirty (Scale+79%) 91/10*†**
- Persian Gulf-USNH, dirty ..... (USMC+20%) $15.24

**Sterling **Owners asked $5.70 (USMC+100%)*

The Market Trend

Demand Looks Strong, and So Do Prices

The lid may not blow off the oil markets, but they were certainly bubbling last week.

Pick out any indicator you want, and it points to record demand, firm prices. Gulf Coast and Mid-Continent gasoline markets have never been so active as they are this season. Marketers up North are almost down to tank bottoms on No. 2 fuel, and have a large off-season stock buildup ahead. Four New York City agencies are looking for 128-million bbl. of No. 6 fuel for fiscal 1957—10.3% more than they needed in 1956.

It's a peak-demand story abroad, too. The refiner who only last week said his Persian Gulf plant was booked up solid through May now is sold out through June. South-to-North oil shipments through Suez are running 17% ahead of this period a year ago. With Britain's coal wearing thin at the seams, the nation's railroads are swinging over to diesel oil. A foreign marketer figures that he's about 3-million bbl. short of heavy fuel between now and the end of the first quarter of 1957.

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No giveaways for ASPPA:

The Armed Services Petroleum Purchasing Agency didn't pick up any giveaways when it came into the market for 84-million gal. of 83/91-octane motor fuel. Most of the prices for loadings in the last half of 1956 were higher than Gulf Coast refiners quote today for spot shipments.

Lowest U. S. offering was 16.8-million gal. at 11¢, which compares with the current 90-octane regular price of 11.25¢ at the Gulf. Other U. S. offerings ranged from 11.25¢ up to 11.65¢.

Why the price wars?

Spotty gasoline price wars keep popping up despite the strength in bulk markets. Nobody seems to have a good answer for them. Prices were 2.4¢ below so-called "normal" in Boston last week, 2.9¢ off in Providence, and 2¢ below in most of the state of New Jersey. Steepest cut was in Cumberland, Md., where prices were off 6.7¢.

No. 2:

Talk of summer-fill discounts has been noticeable by its absence. A year ago jobbers knew all about their suppliers' summer-fill plans by Apr. 15. Nowadays suppliers are talking up the idea that the "important" aspect of any summer-fill plan is to have storage filled to the brim by Nov. 1.

1% resid:

The bull market in ship rates (PW—Apr.27'56,p39) has touched off two increases in low-sulfur No. 6 prices. An East Coast marketer posted $2.93 tank cars and $2.90 barges at New York and Philadelphia, up 15¢ a bbl. And at Philadelphia, Sun Oil advanced 20¢ to the same price.

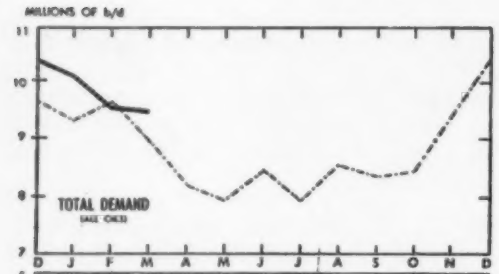
Hindsight:

Almost everybody is kicking himself about the strong tanker market, but mostly the Canadian marketers who have to start hauling next winter's heating oils from the Caribbean now, while the St. Lawrence River is free of ice.

Some Canadians feel that their only solution is to buy tankers. They could then run the ships at cost during the summer. When the St. Lawrence freezes, they could charter out the vessels at "winter" rates.

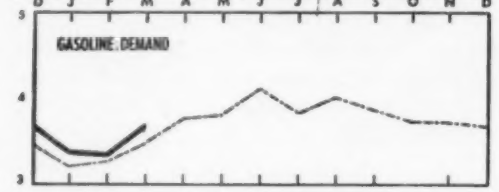
PETROLEUM WEEK'S

Fingertip Figures



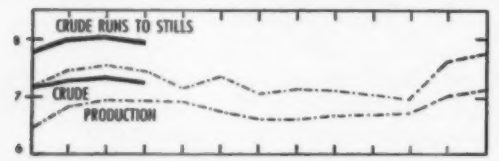
TOTAL DEMAND

Latest 4-week average	9.120
Year ago	8.252



GASOLINE DEMAND

Latest 4-week average	3.976
Year ago	3.831



RUNS TO STILLS

Latest week	7.447
Previous week	7.436
Year ago	7.159

CRUDE PRODUCTION

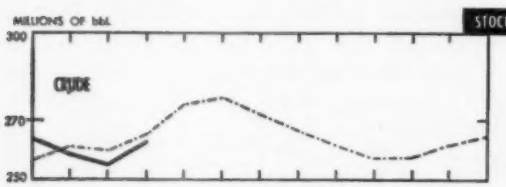
Latest week	7.146
Previous week	7.130
Year ago	6.836

TOTAL IMPORTS

Latest week	1.141
Previous week	1.243
Year ago	1.049

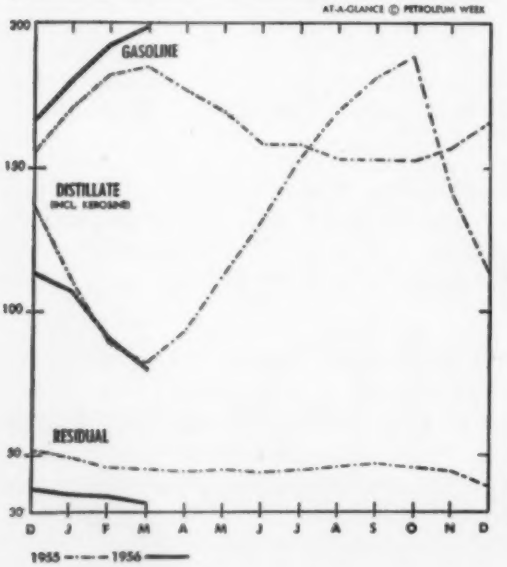
CRUDE IMPORTS

Latest week	.767
Previous week	.788
Year ago	.714



CRUDE STOCKS

Week ended 4-21	270.7
Previous week	267.1
Year ago	272.8



GASOLINE

Latest week	190.2
Previous week	192.9
Year ago	176.8

DISTILLATES

Latest week	79.8
Previous week	80.0
Year ago	88.6

RESIDUAL

Latest week	32.5
Previous week	32.8
Year ago	43.9

TOTAL DEMAND in April jumped about 11% over April, 1955, according to preliminary figures for the first 27 days of the month. These figures indicate April demand at 9,114,000 b/d.

A substantial gain in demand for distillates over last April (up about 36%), due to the cold weather over a good part of the nation, was the most important factor in the demand trend for the month. And despite the cold weather, gasoline demand in April was up about 5%. The year-to-year trend in motor-fuel demand in April was about in line with that of the three preceding months.

* * *

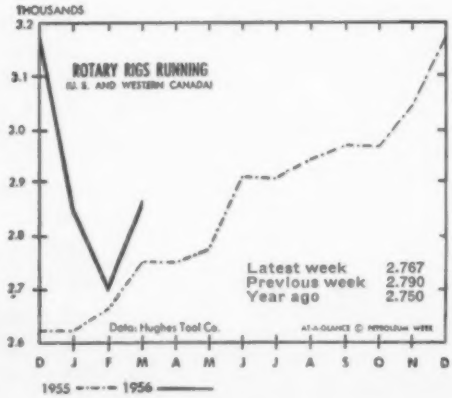
THE CONTINUED better-than-expected demand of the early months of the year is causing more and more 1956 forecasts to be revised upward (PW—Mar.30'56,p9). The latest to increase its estimate for 1956 is the Independent Petroleum Assn. of America's supply and demand committee.

The group now predicts that total demand for all oils this year will average 9,197,000 b/d, up 4.8% over last year. The new IPAA forecast is up 200,000 b/d over the estimate it made last fall.

* * *

BUREAU OF MINES' May forecast predicts gasoline demand for the month at 4-million b/d, or a gain of 4.4% over last May. Indicated demand in April averaged 3,979,000 b/d.

Demand for domestic crude in May is estimated at 6,970,000 b/d. Crude runs to refineries for the month are forecast at 7,750,000 b/d.


THOUSANDS
ROTARY RIGS RUNNING
(U. S. AND WESTERN CANADA)
Latest week 2.767
Previous week 2.790
Year ago 2.750
Data: Hughes Tool Co.
AT-A-GLANCE © PETROLEUM WEEK
D J F M A M J J A S O N D
1955 1956

I. G. (GRADY) DAVIS has been elected president of Mene Grande Oil Co. Davis joined Gulf Research & Development Co., parent company of Mene Grande, in 1935 as a geologist and geophysicist. In 1939, he was transferred to Mene Grande's geological department at Maracaibo, Venezuela. He became Maracaibo district manager in 1948 and later was named vice-president. Davis succeeds **Hoyt Sherman** who is retiring.

M. E. WITHERSPOON has been named West Texas and Eastern New Mexico regional supervisor for Plymouth Oil Co., at Midland, Tex. He was formerly assistant to the vice-president at Sinton, Tex. Witherspoon joined Plymouth in 1927.

ERNEST E. FINKLEA has been named assistant to the Mid-Continent area manager for Schlumberger Well Surveying Corp., at Tulsa. He recently resigned as log analyst for Amerada Petroleum Co.

WAYNE E. GLENN, Continental Oil Co., has been named chairman of the Rocky Mountain district of the American Petroleum Institute's production division. New vice-chairmen are: **R. L. Armstrong,** Oil Well Supply Co., Wyoming; **D. B. Harrel,** Worley & Harrel Drilling Co., North Dakota; **Homer B. Brown,** Mud Control Laboratories, Inc., Colorado; **D. C. Albers,** Ohio Oil Co., Nebraska; **R. W. Gemmer,** Carter Oil Co., Montana; and **Warren Taylor,** El Paso Natural Gas Co., Utah. **Gerald Binker,** National Supply Co., has been elected district secretary-treasurer.

A. L. ROBERTS, general superintendent of operations for Texas Gas Transmission Corp., has been elected a vice-president of Texas Gas Pipe Line Co.

A. O. SAVAGE has been named deputy comptroller of Standard Oil Co. (N. J.) He was formerly an assistant comptroller. New assistant comptrollers are: **W. J. Edmonds,** formerly assistant to the comptroller, and **W. C. Jennings** and **H. W. Kull,** both formerly administrative assistants in the comptroller's department.

DON L. BEEMAN will be sales and service coordinator of the hydraulic-unit sales department of U. S. Industries' Axelson Mfg. Co. He joined Axelson in 1952, and later worked on petroleum equipment sales in the company's California field stores and Vernon plant.

HAROLD L. VALENTINE has been elected chairman of the board and chief executive officer of Metropolitan Petroleum Corp. **George H. Rohrs** succeeds Valentine as president of the corporation, and **C. J. Caniglia** succeeds Rohrs as executive vice-president.

NICHOLAS J. CAMPBELL, JR., has been elected a director of Creole Petroleum Corp. Campbell joined Creole in 1947 as an attorney in the company's New York office. He was named manager of the law department at Caracas in 1953, and was elected a vice-president last January. Campbell succeeds **Lloyd G. Smith** who is retiring after 43 years of service.

RAYMOND B. KELLY, vice-president of exploration and production for Pure Oil Co., has been named a member of the executive committee of Pure's board of directors. He became a vice-president in 1953 and a director in 1954.

W. W. KEELER has been named executive vice-president of Phillips Petroleum Co. Keeler joined Phillips in 1929, at the company's Kansas City Refinery. In 1945 he was named manager of the refining department, and in 1947 he was named vice-president of refining. He became vice-president, executive department, and a director in 1951. **J. M. HOUCHIN** has been elected chairman of the operating committee of Phillips' board of directors. He was formerly general superintendent of the company's production department.

L. J. (JOE) LAWRENCE has been named administrative vice-president of Houston Oil Field Material Co. Lawrence joined Homco in 1936, and was named assistant secretary-treasurer in 1952. He was elected to the board of directors in 1953.

MICHEL T. HALBOUTY, independent oil operator, has been elected president of the Petroleum Club of Houston. Other newly elected officers are: **Wilbur L. Ginther,** first vice-president; **Randolph Yost,** second vice-president; **Logan H. Bagby, Jr.,** secretary; **A. L. Selig,** treasurer; and **B. G. Martin,** assistant secretary and treasurer.

THOMAS W. MILLER has been named executive secretary of the National Lubricating Grease Institute. He was formerly marketing department supervisor of public relations and publications for Skelly Oil Co. He succeeds **Harry F. Bennetts.**

GEORGE J. GREGOR will assist Magnolia Petroleum Co.'s director and vice-president in charge of marketing. Gregor was formerly manager of the Lakes division of Magnolia's parent company, Socony Mobil Oil Co.

G. CLIFFORD JOHNSON (left), will manage supervisory training in the manufacturing department, and **JOHN E. LILLEY** (right) succeeds him as superintendent of the Marcus Hook mechanical department for Sun

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PETROLEUM WEEK REPRESENTATIVES

Atlanta 3 W. H. Kearns
801 Rhodes-Harverty Bldg.
Walnut 5778

Boston 6 Edward A. Callahan, Jr.
350 Park Square Bldg.
Hubbard 2-7160

Chicago 11 G. L. Hackley, Jr.
W. F. Holbrook
520 North Michigan Avenue
Mohawk 4-5800

Cleveland 15 J. E. MacArthur
1510 Hanna Bldg.
Superior 1-7000

Houston 25 David G. Sawyer
724 Prudential Bldg.
Jackson 6-1281

Los Angeles 17 Peter S. Carberry
1125 W. Sixth St.
Madison 6-9351

New York 36 Edward A. Callahan, Jr.
Donald R. Thompson
330 West 42nd Street
Longacre 4-3000

Philadelphia 3 W. A. Potter
Architects Building
Rittenhouse 6-0670

San Francisco 4 William C. Woolston
68 Post Street
Douglas 2-4600

Tulsa 19 J. A. Hartley
209 Constantine Bldg.
601 South Boston
Gibson 7-7767

England, London E.C.4 Herbert Lagler
McGraw-Hill Co., Ltd.
95 Farrington St.

Oil Co. Johnson joined Sun in 1929 as a surveyor party scout at Marcus Hook, and was named superintendent of the refinery's construction and maintenance in 1946. Lilley has been with Sun Oil since 1932. He was named chief engineer of the refinery's mechanical department in 1953.

CLAUD B. BARRETT, vice-president of The Texas Co. at Houston, has been named a director. Barrett joined Texaco in 1927, and in 1953 was named vice-president of domestic sales.

J. C. McCONNICO has been named superintendent for HAP Drilling Co. and Liberty Oil & Gas Co. He recently resigned as production superintendent for Rowland Oil Co.

D. M. McBRIDE has been elected president of Phillips Pipe Line Co. He succeeds **M. E. Foster,** who is establishing a supply and transportation consulting office in Bartlesville. **Myron O. Johnson** has been elected vice-president and general manager of Phillips Pipe Line.

ALEXANDER H. CHAPMAN has resigned as assistant to the vice-president of government relations for Arabian American Oil Co. Chapman will open offices as an engineering consultant after a one-month study trip to South America.

HAROLD LANE will superintend drilling for the newly formed Zephyr Drilling Co., Mt. Carmel, Ill.

SAMUEL H. STITH, Sinclair Oil & Gas Co., has been elected president of the Geological Society of Kentucky. Other new officers are: **Ralph Thomas,** Texas Gas Transmission Corp., and **Frank Walker,** Kentucky Geological Survey, vice-presidents; and **James D. Clay,** Sun Oil Co., secretary-treasurer.

O. T. LAWHORN has been named chief geologist for The Chicago Corp., Ft. Worth integrated oil and gas company. Lawhorn was formerly chief geophysicist for Pan American Production Co. of Houston. He is a member of the American Assn. of Petroleum Geologists and the Society of Exploration Geophysicists.

JAMES A. MILLEN, vice-president in charge of transmission and supply for Southern Counties Gas Co., has been elected a director.

A. A. WHITE has been elected secretary of Texas Gas Corp. He will also serve as secretary of Texas Gas Pipe Line Corp., a subsidiary company.

W. H. JOHNSON, executive vice-president of Lone Star Steel Co., has been elected a director of the company.

F. Brett

L. L. Ware

C. L. Wilson

SINCLAIR OIL & GAS CO. has opened a new operating division at Midland, Tex. **Floyd Brett** has been named manager of the new division. He was formerly assistant division manager at Ft. Worth. **Connie L. Wilson** succeeds Brett at Ft. Worth. Wilson was formerly general staff petroleum engineer. **Loren L. Ware** has been named assistant division manager at Midland. He was formerly division landman at Ft. Worth.

Other newly appointed Midland personnel are: **Richard Frawley,** division exploration superintendent; **John B. Etnyre,** division geophysicist; **John K. Lydecker,** division geologist; **Herbert F. Defenbaugh,** division production superintendent; **Fred C. Rogers,** gas and gas products division superintendent; and **William J. Rogers,** division petroleum engineer. **Marc H. Lowrance** will be division exploration superintendent at Ft. Worth.

Other Oil Industry Personnel Changes:

Company	To:	From:
American Oil Co.		
William B. Patterson	Asst mgr wholesale sales, New York	Asst div mgr, Charlotte,
California Oil Co.		
Minor L. Fahrmann	Asst chief eng, refining div, Perth Amboy, N. J.	Standard of Calif., San Francisco
Carter Oil Co.		
Charles Gadd	Eastern dist landman, Mattoon, Ill.	Dist landman, Grand Rapids, Mich.
Delhi-Taylor Oil Corp.		
James T. Smith	Head, personnel, plant safety dept, Corpus Christi refinery	
Dowell Inc.		
Ed W. Smith	Asst treas, Tulsa	Chief acct, Tulsa
Tom R. Harrison	Chief acct, Tulsa	Asst chief acct, Tulsa
Freeport Oil Co.		
Wade Smith	Div landman, Midland	Kerr-McGee Oil Industries, Midland
Humble Oil & Refining Co.		
J. W. Austin	Mgr wholesale sales, Houston	Mgr northeast sales div, Dallas
George W. Wilmoth	Mgr northeast sales div	Acting mgr, northeast sales div
International Petroleum Co. Ltd. (Colombia)		
Dr. George S. Bays	Mgr mfg, Bogota	Humble Oil & Refining Co., Baytown
Lane-Wells Co.		
Gene Compton	Head, eastern region field service, Oklahoma City	Dist mgr, Oklahoma City
Mike O'Haver	Head, western region field service, Denver	Asst div operating mgr, Kansas
Louis G. Randal, Jr.	Eng trainee, Oklahoma City	
Lion Oil Co.		
Shelton H. Goodwin, Jr.	Dist landman, Albuquerque	Landman, Shreveport
C. J. Little	Dist geologist, Albuquerque	Geologist, Casper
Lone Star Steel Co.		
William Whitfield	Admin asst, gen supt of E.B. Germany Works	Asst supt rolling mills
Jeremiah Sheehan	Asst supt rolling mills	Shift foreman
National Tank Co.		
Joseph Notely	Mgr, Seminole branch	
Oil Center Tool Co.		
Milton Pierce	Sales service force, Odessa	National Supply Co.
Oil Exploration, Inc.		
Roy T. Short	Exploration mgr, Oklahoma City	Clayton (N.M.) branch
Shell Oil Co.		
H. R. Hammerman	Head, dealer training sec, retail dept, New York	Copy chief, ad dept, New York
Skelly Oil Co.		
Herbert L. Johnson	Scout, Amarillo	Rotary Engineers, Inc., Midland
Miller (Bud) White	Casper (Wyo.) office	Scout, Amarillo
Sohio Petroleum Co.		
A. E. Pettit	Staff geologist, offshore, New Orleans	Consultant, Houston
Standard Oil Co. (Ind.)		
Frank M. Long	Mgr real estate, Chicago	Asst mgr real estate, Chicago
Robert L. Gillis	Asst mgr real estate, Chicago	Acting asst mgr real estate, Chicago
The Texas Co.		
C. H. Kallenberger	Asst div pet eng, Wichita	Dist pet eng, Salem, Ill.
E. F. Saunders	Asst dist pet eng, Wichita	Pet eng, Tulsa div
C. F. Mahoney	Div secondary-recovery sec, Tulsa	Pet eng, Salem, Ill.
E. R. Welch	Div secondary-recovery sec, Tulsa	Pet eng, Sims, Ill.
W. F. Stone III	Secondary-recovery sec, Salem, Ill.	Pet eng, Tulsa
Transcontinental Gas Pipe Line Corp.		
Howard L. Cline	Supt, compressor stations, Houston	Asst supt compressor stations, Houston
Union Producing Co.		
E. R. Osburn	Dist geologist, Monroe, La.	Staff Geologist, Midland
U. S. Steel Corp., Oil Well Supply Division		
Luther C. Whalin	Field rep, Sundown, Tex.	
Welex Jet Services, Inc.		
A. N. Taylor	Sales eng, Pampa (Tex.) dist	
New Ventures—		
J. T. Bowman, A. E. Bowman, Joe Henderson, Carl S. Schreiner, Jr.	BHB&S Oil Corp., Midland	
Perry Pounds	Partner, E. N. Murray Co., leasing, drilling, Denver Julesberg Basin	Denver Julesberg landman, Sinclair Oil & Gas Co.

'Sleeper' Bills Can Be Potent

SOME OF THE MANY BILLS now pending in Congress have more importance and significance to the oil industry than readily meets the eye. Such bills sometimes slide through virtually unnoticed, even though they pack a powerful hidden wallop.

M. J. Rathbone, president of Standard Oil Co. (N. J.) recently called attention to two bills that fall in this category. One is a premerger-notification requirement; the other a measure to realign corporate tax rates to range from 22% to a high of 75%.

THE BIGGEST DANGER in each bill is its innocent appearance. The premerger notification, for instance, appears to be solely an effort to strengthen the government's hand in fighting monopoly—and even the toughest businessman realizes the need for effective antimonopoly laws.

But it's only natural that the average businessman would say to himself: Since this law is aimed at illegal monopolies, I'm not affected unless I do something illegal.

But here's the point: You can be directly affected—and adversely so—even though your activities are entirely within the law, both in letter and spirit.

Bear in mind that the premerger-notification rule would require companies above a certain size who are planning merger to give the Justice Dept. and the Federal Trade Commission 90 days advance notice.

Thus, two government agencies would have the authority to hinder effectively any merger, even though a proposed merger might have no conceivable effect upon competition. If, after 90 days, the government had not challenged the merger, it could proceed. But apparently the agencies could, if they wished, simply say they wanted to study the merger further—and thus delay it again and again.

Furthermore, even though the agencies did not block the merger, the merging companies would have no assurance against a suit a year or two—or ten years—later, in which the government would declare the merger was a violation of the law. The sword would always be hanging over their heads.

In other words, the premerger-notification formula would hold no benefits for the companies. But it would subject them to red tape and delay. And it would be just one more instance of government interference in business activities, even though the government had no shred of evidence of any illegal action.

All in all, the worst aspect of the proposal is that Washington would have to be advised about ordinary business transactions even though, under no stretch of the imagination, would they be in violation of the law.

THERE ARE HIDDEN repercussions, too, in the bill to realign corporate taxes. On the surface, the measure seems to have merit: It would tax the small firm less and the big firm more, with the aim of helping small business.

But if a big firm is hit with a 75% tax, what will happen to its expansion programs? And what will be the effect on the smaller firms who supply goods and services to the larger firms? Obviously, cutting a small firm's taxes wouldn't help it if the firm's income is reduced at the same time.

It behooves the industry, and each individual in it, to give careful study and thought to proposals made in Congress and in state legislatures. Correcting a measure before it is passed is much simpler than getting a bad law off the books.

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